Commercialization Initiatives at Ulaanbaatar Power Station #4

Volume 1

EXECUTIVE SUMMARY

Ulaanbaatar Power Station No. 4 is one of the 18 new State Owned corporations created as a result of the restructuring of the Energy Sector of Mongolia. The Government of Mongolia requested the U.S. Agency for International Development to provide assistance on many aspects of the restructuring. The goal of the Energy Sector Restructuring Project (ESRP) is to assist with the implementation of the new Law of Mongolia on Energy aimed at restructuring the sector in a more commercially based environment that would shed unnecessary fuel, equipment, and labor cost burdens, creating efficient energy facilities and operations that yield a consistent and profitable contractual, regulatory, and industrial framework. This framework will attract investment to support new supply facilities to meet energy demand at least cost while improving supply, reliability, and efficiency.

One of the tasks is to provide technical assistance to several of the new companies to help them make the transition from being part of the State controlled, vertically integrated energy system to managing an independent business on a commercial basis in the new industry environment. This report is the result of the commercialization work conducted at Power Station No. 4. The primary purpose of the report is to advise the Management and Governing Board (Board of Directors) on business management issues. It can also be utilized to inform interested stakeholders (The Government of Mongolia, International organizations, potential investors, etc) about the company and ways in which they can help it succeed in the new environment.

Change is never easy, especially in a company as large as this one. There are a significant number of risks and uncertainties involved, including the new industry structure, a new tariff system, access to funds for operations and capital improvements, and lack of control over the customers (Electricity and Heat Distribution companies) that were originally part of the vertically integrated energy system. On the other hand, there are also rewards associated with operating an independent business. The management team and employees will increasingly have more control of their future and should experience less direct involvement from the Energy Authority and Ministry of Infrastructure. They can directly benefit from meaningful cost reductions they achieve and work to increase the value of the business (Shareholder Value).

On 14 October 2002, a presentation of the draft of this report was made to UB4 management personnel and other interested stakeholders. The entire Governing Board was given an advanced copy of the report and was invited to attend. The State Property Committee was represented at the meeting as well as USAID. Comments were received on the draft report from the State Property Committee and those comments have been incorporated into this final report where appropriate. Most comments focused on providing more information concerning the recommendations and providing summary action plans to implement the recommendations.

This report begins with an introduction and overview of the Company and the importance of Commercialization in the context of the current state of the Mongolian Energy Sector and the future direction it is expected to take (Chapter 1).

The importance of implementing business management principles at UB4 is emphasized in Chapter 2, beginning with the identification of the major business processes and continuing with a discussion of the importance of concentrating on those processes and the use of Key Performance Measures to quantify and measure progress. The major business processes are then reviewed in detail in individual chapters as follows:

- Generation – the Primary Process (Chapter 5)

- Sales and Service (Chapter 6)
- Pricing (Chapter 7)
- Billing and Collection (Chapter 8)
- Administrative Processes (Chapter 9)

Each chapter (5–9) begins with an overview of the process, some history, and an evaluation of the current situation. Specific recommendations are made for each process to enable UB4 to move forward as an independent company on a commercial basis.

Chapter 3 contains a detailed analysis of the financial situation of the Company and a discussion of the importance of accounting and financial analysis in the changing environment. Sector issues, such as International loans and debt resolution are also explored.

Management Information Systems and Information Technology provide the key tools the Company must utilize to effectively and efficiently carry out all its processes. Chapter 4 provides the status of the present systems, a review of the adequacy of those systems, an overview of the future directions for the technology, and recommendations for development.

As a result of comments received concerning the draft report, Chapter 10 is included to provide more information concerning the recommendations made. A table has been developed for each recommendation and includes:

- The Recommendation
- Background on the issues to give the reader a framework to understand the situation
- Preconditions that are necessary in order to carry out the recommendation
- A Summary Action Plan that includes the primary tasks, the person or group responsible for the task, and a proposed time frame. These are not detailed action plans, but rather a summary road map that the Company can use to develop the individual assignments in order to achieve progress on the recommendations.
- The Results Expected as a result of implementing the recommendation.

In addition, in Chapter 11 the recommendations have been prioritized in terms of importance and urgency. For the highest priority recommendations, suggested areas in which near-term technical assistance could benefit the Company or the Government of Mongolia have been identified.

Exhibit ES1 is a summary of primary recommendations to the management team of the Company. It includes actions that UB4 has the ability and authority to take on its own initiative within current laws and regulations. As a practical matter, not all recommendations can be implemented in a short period of time. For that reason, each recommendation has been assigned priorities in terms of its importance and urgency. Progress will only be made if the Company begins implementation of the commercialization recommendations: one step at a time. UB4 must begin to manage it's own future.

The reader is encouraged to read the entire report for a more in depth discussion of the current situation and the reasons for each of those recommendations made.

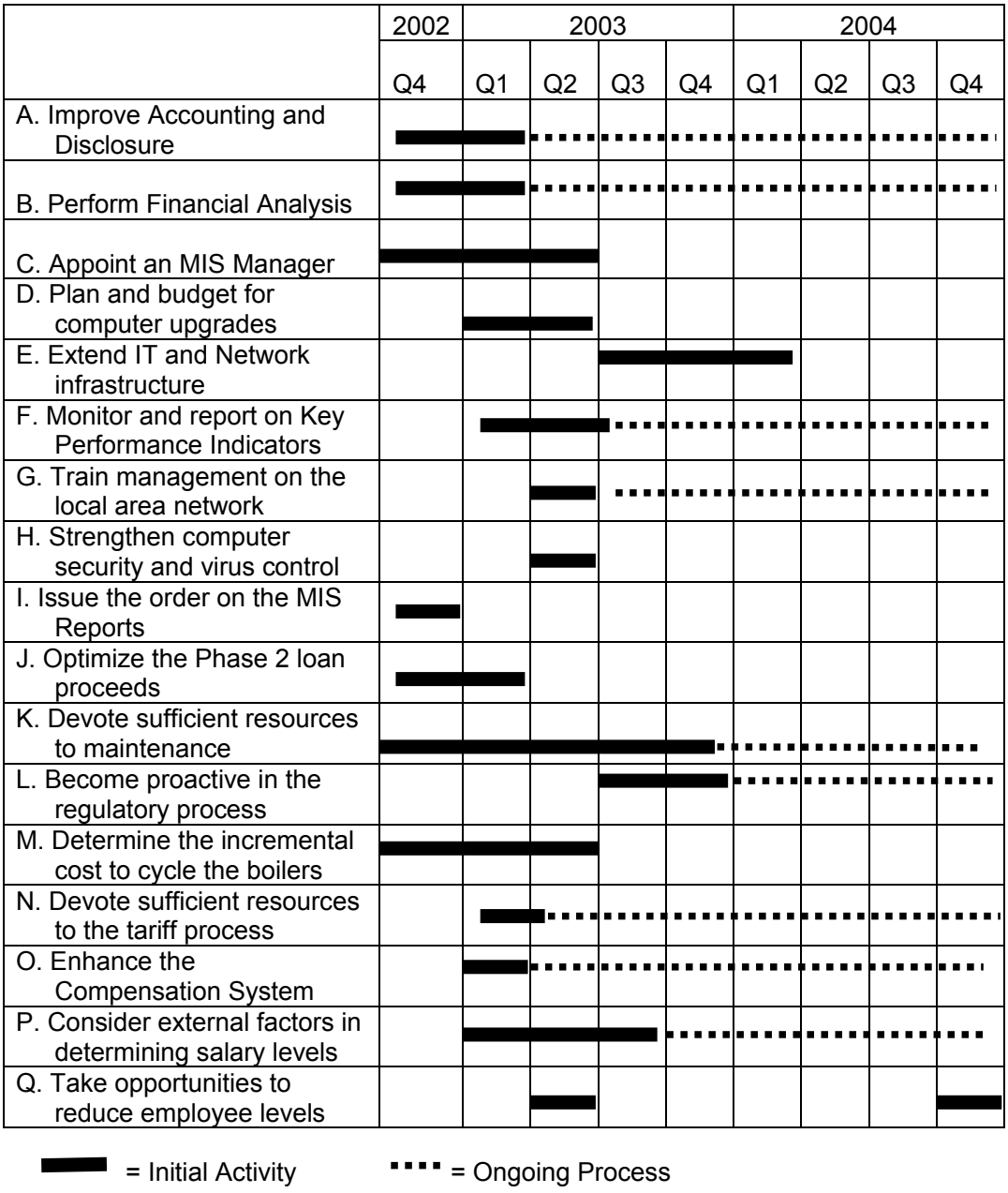
Exhibit ES.1 Recommendations for Company Implementation

	RECOMMENDATION	Importance	Urgency
A	Continue to improve accounting and reporting and move toward IAS compliance over the next few years (Chapter 3)	Medium	Medium
B	Engineers and finance specialists should perform a financial analysis on future projects prior to presenting them to management for approval (Chapter 3)	High	High
C	Create the position of MIS Manager and give that person overall responsibility for planning and management of the organizations IT and MIS systems (Chapter 4)	High	High
D	Develop a plan and budget to upgrade computer systems, extend the Local Area Network in the office and the plant and manage hardware and software maintenance (Chapter 4)	Medium	Medium
E	Follow the short-term plan developed to enhance and extend some sections of the IT and network infrastructure including equipment that can be financed from the current UB4 budget. Also develop a four-year plan (Chapter 4)	Medium	Medium
F	Continually monitor and report on the Key Performance Indicators (Chapter 4)	High	High
G	Provide training to management on the facilities available in the local area network and encourage them to make use of this tool to speed communication within the organization (Chapter 4)	Medium	Low
H	IT activities such as security, virus control, and back-up need to be reviewed and strengthened (Chapter 4)	Medium	Medium
I	Issue the Executive Order to produce the recommended MIS Reports (Chapter 4)	Done	Done
J	The Management team must take advantage of the Phase 2 loan proceeds in the most optimal manner from an operational and financial perspective to realize improvements on the Key Performance Measures (Chapter 5)	High	High
K	Once the rehabilitation work is completed, sufficient resources must be devoted to periodic maintenance to prevent a recurrence of the situation in the mid 1990s (Chapter 5)	High	Low
L	Become more proactive in the regulatory process. For example, develop and propose Incentive Mechanisms to ERA (Chapter 7)	Medium	Medium

	RECOMMENDATION	Importance	Urgency
M	Perform a detailed analysis of the incremental cost to cycle its boilers on short notice to follow the load and present that analysis to the ERA in order that an Ancillary Services tariff component can be developed and applied (Chapter 7)	Medium	Medium
N	Devote sufficient time and resources to the tariff process in order to present its position in a detailed, transparent, understandable manner to have a successful outcome (Chapter 7)	Medium	Medium
O	Continue to enhance the compensation system to ensure that employees are compensated based on their contribution to the success of the organization. The Incentive Compensation or Bonus Plan is a progressive measure. Phase out the Experience Benefit and the 13th Month payments (Chapter 9)	Medium	Low
P	Consider external economic factors, the financial situation of the Company, and wage levels in other industries when determining salary increases (Chapter 9)	Medium	Low
Q	Take every opportunity to reduce employee levels (a factor over which management has a significant level of control) based on operating and financial criteria. Attrition should be used as a primary tool (Chapter 9)	Medium	Low

The summary timeline for implementing the Company recommendations is displayed in Exhibit ES.2. The Action Plans for each of the recommendations including the individual tasks, responsible party, and time schedule are detailed in Chapter 10.

Exhibit ES.2 Summary Timeline for Company Recommendations



UB4 operates within the context of the overall power sector in accordance with the laws of Mongolia and the policies of the Government, its Ministries, and the Energy Regulatory Authority. This report identifies obstacles to commercialization as a result of those constraints.

Exhibit ES.3 is a summary of primary recommendations made which the Company does not have the authority to implement on its own. It includes changes that the Government of Mongolia, its Ministries, and the Energy Regulatory Authority are encouraged to

implement in order that the Company (and other Companies in the sector) has the opportunity to operate on a commercial basis. Again, the reader is encouraged to review the entire report for a more in depth discussion of the issues.

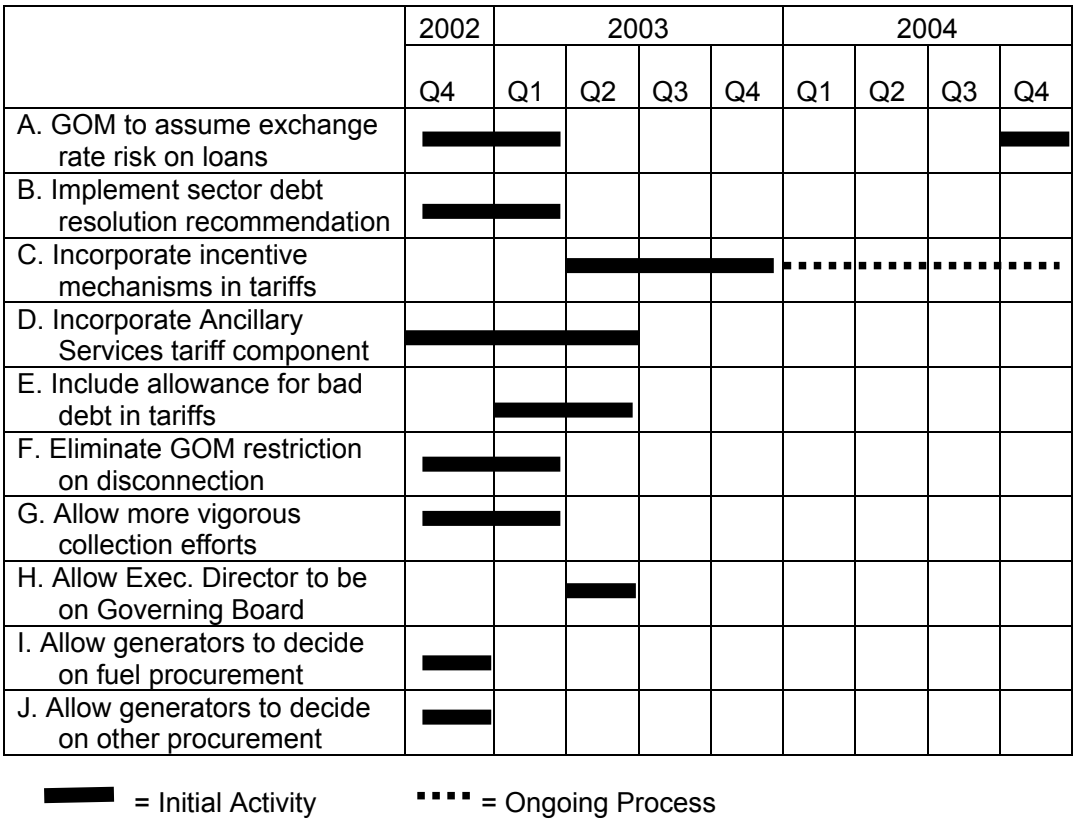
Exhibit ES.3 Sector Recommendations

	RECOMMENDATION	Importance	Urgency
A	The Government of Mongolia should assume the exchange rate risk associated with international loans (Chapter 3)	Medium	Medium
B	The Government of Mongolia should Implement the September 2001, recommendation given to it to resolve the major debt issues of the Licensees relating to inherited customer accounts receivable, debt to coal suppliers, and the debt from the distribution licensees to the generators (Chapter 3)	High	High
C	The ERA should incorporate regulatory incentive mechanisms in the tariff system (Chapter 7)	Medium	Medium
D	The ERA should incorporate an Ancillary Services component in the Generation tariff to allow Licensees to recover the cost of cycling boilers on short notice to follow the load (Chapter 7)	Medium	Medium
E	The ERA should include an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers (Chapter 8)	Medium	Medium
F	The Government of Mongolia should discontinue the practice of having a list of entities that it will not allow suppliers to disconnect. The Government should not use the energy sector to provide non-transparent subsidies to those entities (Chapter 8)	High	High
G	The Government of Mongolia should allow licensees to take more vigorous collection action with retail customers, including State Owned and Budget Entities (Chapter 8)	High	High
H	If the opportunity arises for the Government of Mongolia to modify the Law on Corporations, it is recommended that the Executive Director of the Company should be a member of the Governing Board (Chapter 9)	Medium	Low
I	The Ministry of Infrastructure should allow the company, and other generators, to have more influence over the fuel procurement process. The Ministry should discontinue the practice of dictating that power stations buy amounts of coal in excess of the quantity needed to maintain a reasonable inventory. Additionally, power stations should not be required to buy from mines that do not produce the type or quality of coal they need (Chapter 9)	High	High

	RECOMMENDATION	Importance	Urgency
J	The Ministry of Infrastructure should revise the decree requiring licensees to procure materials through the EA. The licensees should be given the option of procuring the items themselves (Chapter 9)	Medium	Medium

The summary timeline for implementing the Sector recommendations is displayed in Exhibit ES.4. The Action Plans for each of the recommendations containing the individual tasks, the responsible party, and the time schedule are included in Chapter 10.

Exhibit ES.4 Summary Timeline for Sector Recommendations



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1. INTRODUCTION

1.1 THE MONGOLIA ENERGY SECTOR RESTRUCTURING PROGRAM

The "Law of Mongolia on Energy" became effective April 15, 2001. The law stipulated the restructuring of the vertically integrated electricity and heat sector, then part of the Energy Authority under the Ministry of Infrastructure. The restructuring was accomplished by the creation of 18 new entities along the business lines of Generation, Transmission, Dispatch, and Distribution/Supply. The entities are regulated by the Energy Regulatory Authority (ERA), primarily utilizing the tools of licensing and tariff approval. The State Property Committee - responsible for the restructuring and eventual privatization of the Energy Authority's successor companies - has expressed interest in receiving technical assistance from USAID to support the commercialization and privatization activities.

The goal of the Energy Sector Restructuring Project (ESRP) is to assist with the implementation of the new law aimed at restructuring the sector to shed unnecessary fuel, equipment, and labor cost burdens, creating efficient energy facilities and operations that yield a consistent and profitable contractual, regulatory, and industrial framework. This framework will attract investment to support new supply facilities to meet energy demand at least cost while improving supply, reliability, and efficiency.

The activities to be undertaken by the Project include:

- restructuring the vertically integrated utility (EA) - unbundling into state corporations;
- establishment of an Energy Regulatory Authority;
- setting up a licensing regime to ensure that commercial and regulatory commitments are honored and consumer protection is provided;
- development of network operations and access rules;
- development of cost-of-service-based tariffs to allow for recovery of costs and to provide for new investments in the future, including the deregulation of fuel prices and contract prices between eligible consumers and non-regulated suppliers;
- development of a system of competition in generation and perhaps in retail (supply) if economically warranted;
- commercialization of the sector entities and preparation for privatization; and
- privatization of the State owned commercialized companies with level and timing determined by Government policy.

Accomplishment of these activities is dependent on action by the Government of Mongolia. The USAID program will provide the essential framework and supportive technical assistance necessary for the GOM to achieve the program results.

The framework for restructuring is guided by the Law of Mongolia on Energy and subsequent Government Resolutions. During the second half of 2001, the sector was unbundled into the following components, in accordance with the resolution and the law:

Generation (Electricity and Heat)
Transmission
Dispatching
Electricity Distribution
Heat Distribution
Regulated supply of energy

Those 18 new entities were spun off from the Energy Authority, each with their own corporate identities and financial structures. Ulaanbaatar Power Station #4 is one of those entities.

1.2 COMMERCIALIZATION EFFORTS

It is helpful to define what commercialization actually means. "Commercialize" is defined in the dictionary as "to manage on a business basis for profit". "Commercial" is defined as "suitable, adequate, or prepared for commerce". That is exactly what Mongolia hopes to achieve in the commercialization of the individual entities.

A major objective of the Commercialization Program is to work with the management team to facilitate the transition from being a segment of the State controlled, vertically integrated energy system to managing an independent business. Although privatization of the energy sector is an ultimate goal of the Government of Mongolia, the timetable is uncertain and, therefore, it is important to effectively commercialize the companies. It may be several years (or more) before the companies are privatized so it is very important for them to operate as efficiently as possible on a commercial basis.

An external view of commercialization is important. Following are some excerpts from a research paper titled Restructuring the Power Sector: The Case of Small Systems" by Robert Bacon that are pertinent to the situation in Mongolia:

> *"Performance assessments of publicly owned entities should make a distinction between entities that have been **corporatized and commercialized** and those that have not been. Commercialization is possible only if the government removes itself from day-to-day interference in such issues as tariff setting and employment. Some countries that have not been ready to privatize their power sector have introduced commercialization (New Zealand, Portugal), an important intermediate step between the most interventionist form of state ownership and privatization. Commercialization may allow many of the potential gains in efficiency to be captured, especially where there is little scope for competition. Small systems may thus find it of little incremental benefit to privatize, provided that the government maintains an "arm's length" relationship with the company. Where this is more difficult, because of the political situation or because of the traditional approach to state companies, privatization may bring permanent benefits that would not be sustainable with a commercialized state entity."*
>
> *"This shift involves a potential gain in **productive efficiency** if private industry can cut costs. Public ownership tends to result in productive inefficiency, both because managers have little incentive to reduce costs and because politicians often are willing to increase costs to serve other purposes--for example, providing secure employment. The political incentive to collect revenues or prevent theft of power can also be low."*
>
> *"Whether a private monopoly will be productively efficient (that is, produce a given output at minimum cost) is uncertain. The few well-established private*

monopolies (Barbados, Bermuda) appear to work well. The poor performance of many state companies is more likely to be attributable to the nature of their ownership than to their structure."

The commercialization efforts begin with an overall review of the company, focusing on the aspects that are important in a commercial environment such as:

- Financial (accounting, management reporting, cash flow,)
- Planning (operational & financial – focus on short-term)
- Organization and Staffing
- Compensation System (incentives for employees)
- Technical Performance
- Billing and Collection
- Information Systems
- Procurement

Looking also toward the longer term, the commercialization efforts should strive to add value to the entity in such a manner that it is perceived by potential investors as being a viable "Business" with potential for success in a commercial environment. For that reason, the efforts will also focus on critical aspects that strategic investors look for such as:

- A strong management team focused on results
- A reasonable regulatory environment
- Progress on critical success factors such as:
  - Ability to collect revenue
  - Efficient operations (good heat rates and availability)
  - Reduction of expenses

1.3 OVERVIEW OF THE COMPANY

Ulaanbaatar Power Station No. 4 (herein referred to as "UB4" or the "Company") is a State Owned Shareholding Company operating under the Company Law of Mongolia. At the present time, its shares are 100% State Owned by the following State Agencies:

- Ministry of Infrastructure (41%)
- Ministry of Finance and Economy (20%)
- State Property Committee (39%)

It holds a license issued by the Energy Regulatory Authority of Mongolia (ERA) authorizing it to generate electricity, steam, and hot water. The license grants UB4 various rights and imposes various requirements on the Company. As a regulated entity operating under the Law of Mongolia on Energy, its tariffs must be approved by the ERA.

The Power Station is the Combined Heat and Power (CHP) type, producing electricity and heat in a combined cycle and also providing high-pressure steam to adjoining industrial facilities for their use. The electricity produced is provided at 220,000 and 110,000 volts

to the Central Electricity System of Mongolia, serving the major cities of Ulaanbaatar, Erdenet, Darkhan, and surrounding areas. Hot water is provided in the winter and sold to Ulaanbaatar Heat Distribution Company for district heating and year around for general hot water needs of businesses and households.

The power station was commissioned in stages over the period 1983 to 1991. It consists of 8 boilers designed to produce 420 tons per hour of superheated steam. There are six turbine generators with an installed capacity of 540 MW (3x100 MW and 3x80 MW). At the present time, however, the electrical capacity is approximately 432 MW. The power station burns coal, the majority of which is acquired from the Baganuur Mine, with a heating value of approximately 3,500 kcal/kg.

During the year 2001, the power station produced net electrical output of 1,553 GWh of electricity and 2.56 million Gcal of heat, hot water and industrial processing steam.

The company has approximately 1,380 employees. The Senior Management of the company consists of:

Mr. Bayarbaatar, Executive Director
Mr. Batsend, Deputy Director and Chief Engineer with responsibility for technical operations
Mr. Byanjargal, Deputy Director with responsibility for finance and administration

A brief financial picture of the company will give the reader a feel for the situation. Following are selected summary Balance Sheet items at 31 December 2001 in billions of Tg:

Accounts Receivable	14.0
Inventory	6.8
Net Fixed Assets	117.0
Total Assets	139.3
Accounts Payable	17.8
International Loan	38.1
Equity	66.5

The summary income statement for the year 2001 (in billions of Tg) is as follows:

Revenue from Electricity Sales	34.6	
Revenue from Heat Sales	8.5	
Revenue from Industrial Steam Sales	0.6	
Total Revenue		43.7
Fuel Expense	22.6	
Depreciation	12.6	
Salaries and Related Costs	4.5	
Other Expenses	7.4	
Total Expenses		47.1
Net Income (loss)		(3.4)

A detailed discussion of the financial situation of the company is presented in Chapter 3.

2. IMPLEMENTING A BUSINESS MANAGEMENT FOCUS

2.1 THE TRANSITION TO AN INDEPENDENT BUSINESS

Prior to the restructuring of the Mongolian Power Sector in 2001, The UB4 Power Station was a separate "entity" within the Energy Authority, a unit of the Ministry of Infrastructure. It had its own balance sheet and income statement and was responsible for operating and maintaining the power station. However, many aspects of operations were dictated by the Energy Authority including output levels, procurement policies, and human resource management. All financial aspects were dictated by either the Energy Authority (funds for operations, maintenance, capital improvements, etc) or the Ministry of Finance and Economy (tariffs).

Change is never easy, especially in a company as large as this one. There are a significant number of risks and uncertainties involved, including the new industry structure, a new tariff system, access to funds for operations and capital improvements, and lack of control over the customers (Electricity and Heat Distribution companies) that used to also be a part of the Energy Authority. On the other hand, there are also rewards associated with operating an independent business. The UB4 management team and employees will increasingly have more control of their future and should experience less interference from the Energy Authority and Ministry of Infrastructure. They can directly benefit from meaningful cost reductions they achieve and work to increase the value of the business (Shareholder Value).

At the power station level, the primary focus has historically been on the technical operation of the facilities in order to produce whatever level of output was required. In the newly restructured environment, this technical focus must be maintained (and strengthened where possible) but the primary challenge to the management team of this newly created company is to develop a business management focus. There is definitely a Culture Change required by all company personnel. Compared to the change occurring in companies in highly developed countries, the management team of UB4 faces a much greater challenge. The paradigm shift required here is much more fundamental than the shift experienced in developed countries over the past 10 years.

One of the objectives of the Commercialization work is to work with the management team to facilitate the transition from being a segment of the Energy Authority to managing an independent business. Although privatization of the energy sector is an ultimate goal of the Government of Mongolia, the timetable is uncertain and, therefore, it is important to effectively commercialize the companies. It may be several years (or more) before the companies are privatized, and therefore, it is very important for them to operate as efficiently as possible on a commercial basis.

2.2 INSTILLING BUSINESS MANAGEMENT CONCEPTS

Given the complexities of a major company such as UB4, the management team often becomes very involved in day-to-day operational and technical matters and forgets that their main task is to run a business. It is often helpful for managers of a large business to focus on the basics and keep in mind the things that all good small business owners do on a daily basis. In fact, many of the modern business management theories focus on having large organizations (that often become bureaucratic over time) think and act like

small businesses. Basic business management principles may be phrased in many ways, but generally include the following:

- Get to know the Customer
- Provide efficient and economic service
- Keep the Customer happy by providing good service
- Price the product or service properly
- Collect revenues
- Have a minimal number of organizational layers
- Monitor expenses closely
- Control costs
- Inspire teamwork among employees in different functional areas
- Focus the entire team on achieving a few key objectives
- Reward employees for the contributions they make

In the context of the Mongolian power sector entities, the situation is that few, if any, members of the management team have experience in managing a commercial business. It is, therefore, very important to start with basic business management principles and build upon those as we move forward. The principles outlined above take on a new meaning for the recently restructured entities in the power sector. For example:

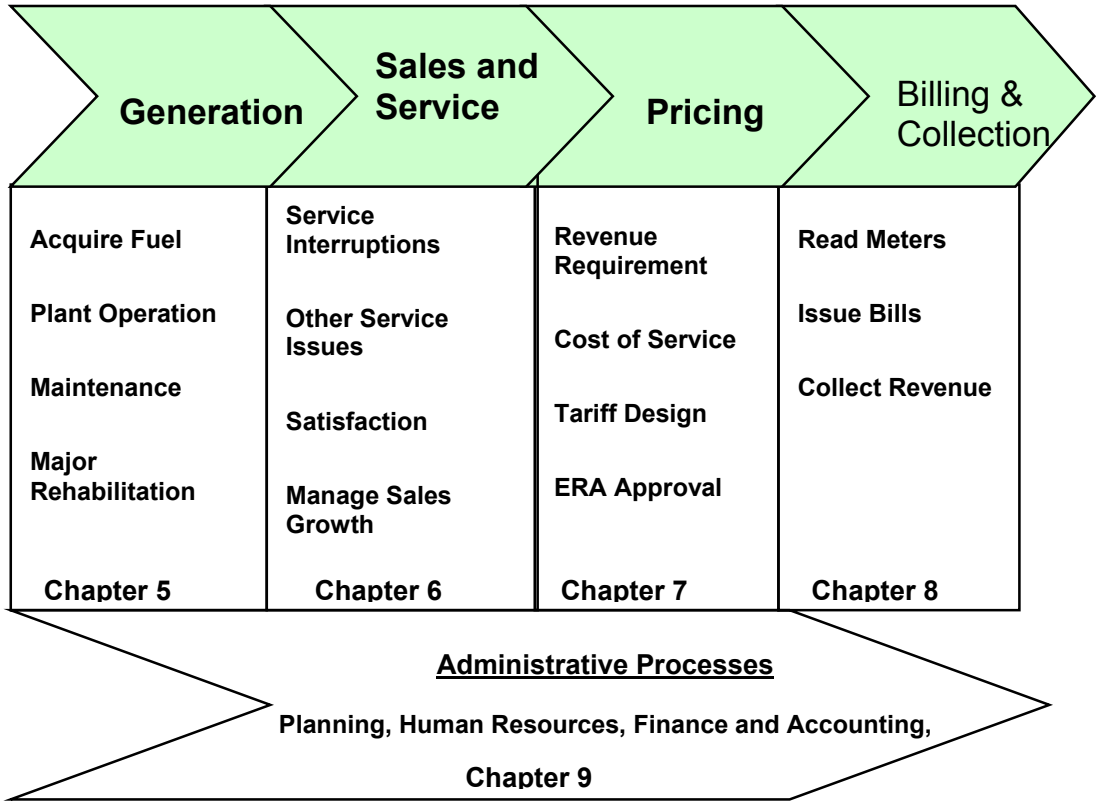
- Providing good service is now something done to satisfy customers and fulfill the requirements of a commercial license, as opposed to following the dictates of a government ministry
- Pricing is now a very critical (and more complex) process that has a direct impact on the financial health of the company, requiring UB4 to interface with the newly established Energy Regulatory Authority
- Monitoring and controlling costs is now critical to the financial health of the company, not an external constraint imposed by a ministry

Commercialization efforts with UB4 have focused on reviewing the overall business and focusing on basic management principles.

2.3 THE VALUE CHAIN FOR UB4

There are various ways to view a business and use that orientation to manage effectively. A business can be thought of as a collection of basic processes. If the individual processes are managed properly, the business has an opportunity to be successful. A "Value Chain' is one way to illustrate the various processes and portray information in a simplified format. The Value Chain for UB4 can be portrayed as follows:

Exhibit 2.1 The Value Chain for UB4



It is helpful to keep the entire management team focused on these key processes. A chapter is devoted to each of these processes (as shown in the diagram) where they will be reviewed in greater detail.

2.4 OVERALL ASSESSMENT OF THE CURRENT SITUATION

There are many ways in which a business can be assessed. An obvious one is from a financial point of view and others include operational and technical assessments. The Strategic Planning process provides a useful way to view a business entity in terms of its Strengths and Weaknesses as well as its Opportunities and Threats (often called a SWOT Analysis).

Strengths and weaknesses are essentially internal to the organization and relate to matters concerning resources, programs and organization in key areas. These include:

- Sales and marketing;
- Management: systems, expertise, and resources;
- Operations: efficiency, capacity, and processes;

- Product and service quality
- Competitiveness;
- Finances: resources and performance;
- Cost Structure;
- Systems: organization and structures.

The management team has a significant amount of control over these internal issues and, therefore, must focus their efforts to:

- Build on the strengths
- Resolve or overcome the weaknesses

Opportunities and threats are generally external situations confronting a company and can exist or develop in the following areas:

- The evolving industry and market structure that presents many uncertainties
- The evolving regulatory and tariff methodologies of the newly created Energy Regulatory Authority
- The marketplace with its many economic and social factors (customers; economic situation, and social/demographic issues)
- Political and environmental factors
- Competition that may be creating new threats or opportunities

The management team has less control over these external issues than it does on the internal ones, however, it must focus on:

- Taking advantage of opportunities whenever possible
- Avoiding or dealing with threats

Exhibit 2.2 SWOT Analysis

STRENGTHS	WEAKNESSES
UB4 is the "Low Cost Producer"	Slow paying customers
Available capacity to handle increased sales	Difficult to economically perform load following
Business orientation of the management team	Significant international debt load
Performance monitoring system in place	Limited domestic borrowing capacity
Bonus plan to motivate employees	
Large enough to attract strategic investors	

OPPORTUNITIES	THREATS
Potential load growth	Interference from Government Ministries
Efficiencies possible with Phase 2 refurbishment project	Continuing poor economic situation in the country
Transparent regulation providing cost and investment recovery	Evolving regulatory environment
	Fuel price increases
	Fuel transportation cost increases

2.5 CONTINUOUS IMPROVEMENT

In order to build on the strengths, overcome the weaknesses, take advantage of opportunities, and deal with threats, the company must implement a Continuous Improvement philosophy. The concept of Continuous Improvement is based on the premise that improvement is not a "One Time Project". The Company must adopt a management philosophy of continually improving its performance on all key business processes. This requires:

- Involving the entire organization to create a spirit of teamwork
- Keeping all employees focused on what is really important to provide momentum
- Monitoring and report progress on a monthly basis to the entire team (not just managers)
- Rewarding performance based on results

UB4 management must recognize that resources (personnel and money) are limited. Concentrating on a limited number of initiatives at one time and devoting sufficient resources to those initiatives is critical. Each managerial area should work on only a few aspects of each of the 5 processes shown in the value chain to be most effective.

2.6 CRITICAL SUCCESS FACTORS AND KEY PERFORMANCE MEASURES

The management team is responsible for a large entity that must effectively and efficiently produce power 24 hours per day, 7 days per week. This often means that managers and

employees spend their time “putting out fires”, not literally, but in the sense that day-to-day problems and the details of operations often consume the entire working day.

It is important to take a more strategic, longer-term view in order to achieve continuous improvement. Management must determine what the critical factors are that will allow it to be successful in the future, focus efforts on those factors, and monitor progress toward improvement. Some of the Critical Success Factors for UB4 can be expressed as follows:

- Improve operational efficiency through:
  - Reduction of station use
  - Improvement of fuel rates
  - Improved plant availability
- Collect revenue using all available means
- Achieve financial sustainability
- Meet licensing requirements
- Comply with the grid code
- Achieve the proper level of tariffs
- Properly maintain the power station (given limited resources)
- Effective management of the employee complement
- Cost effective and timely procurement
- “Manage” (to the extent possible) the Phase 2 refurbishment to achieve maximum operational and economic benefit

There is a saying that “What gets measured - gets done”. That is very true in this situation and the reason that it is recommended that a measurement system be put in place to continually monitor progress. In Chapter 4, Management Information Systems, a detailed recommendation is made to identify the critical success factors for each business function and to monitor progress on Key Performance Measures. The reader is encouraged to refer to that chapter and Appendix D-2.

3. FINANCIAL SITUATION OF THE COMPANY

3.1 INTRODUCTION

Since Power Station #4 was an operating unit of the Energy Authority prior to restructuring, it had its own set of accounts, including a Balance Sheet and Income Statement. Although the accounting procedures somewhat conform to International Accounting Standards (IAS), they cannot be considered to be in strict compliance with IAS. Readers should keep this in mind when reviewing information in this report and, in fact, any financial information from the power sector in general. The Company does use a double entry bookkeeping system, the standard subsidiary ledgers (accounts payable, accounts receivable, inventories, expenses, etc.) are kept primarily on an accrual basis, and statements are produced that follow the basic IAS formats. The Company actually has a reasonable, workable accounting system as compared with energy entities in many developing countries, showing that it has made significant progress. See Chapter 4 for a discussion of the MIS aspects of the accounting systems.

There are several limitations to the financial statements that the reader should be aware of, however, including:

- Although an "Audit" is performed by a local accountant, it is not in accordance with IAS.
- There is no disclosure to enable the reader to obtain a good understanding of the statements. The reader does not know, for example, the basic accounting principles used to produce the statements or the reasons for major deviations in balances. Adequate disclosure is a critical element of IAS compliance.
- There is not always consistency in presentation
- IAS Accounting policies are not followed in the following areas:
  - There is no bad debt expense recorded on the income statement and no allowance for bad debt on the balance sheet, resulting in an overvaluation of Accounts Receivable
  - Fixed Assets are not properly valued since the Mongolian power sector has historically capitalized maintenance costs as opposed to charging them to expense. This has the effect of understating maintenance expense and overstating the value of fixed assets. Future capacity building seminars for energy sector companies will address this and other accounting issues.
  - Fixed Asset values were adjusted for inflation in the mid 1990s to reflect the hyperinflation being experienced at the time. In recent years, no inflation adjustments have been made. There is no relationship, therefore, between asset values recorded on the balance sheet and the current value of the assets, however one wants to define value. Although the reader should be aware of this, the situation is not unlike that in many countries that choose not to revalue plant assets.
  - International Loan Liabilities are not recorded until the projects are completed, resulting in an understatement of Construction Work in Progress and an understatement of Long-Term Debt.

It is recommended that the Company continue to improve in this area and move toward IAS compliance over the next few years. This would provide several benefits, including the fact that strategic investors place a high importance on financial statements in compliance with IAS.

3.2 HISTORICAL FINANCIAL RESULTS

Appendix A contains the detailed financial statements from 1998 through June 2002. The reader is encouraged to review that information for details, if necessary. The financial information presented in the body of this report has been summarized to focus on the significant items. The key financial statements are summarized in Exhibits 3.1 and 3.2.

Exhibit 3.1 Balance Sheet

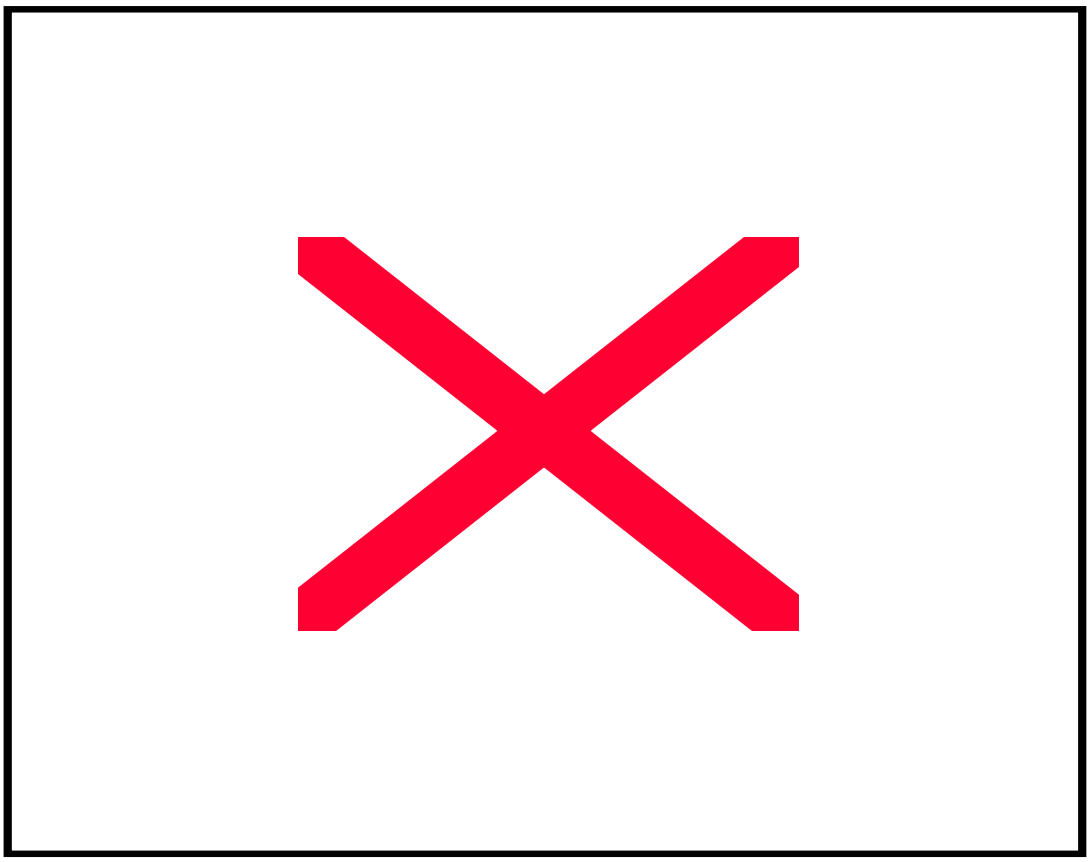
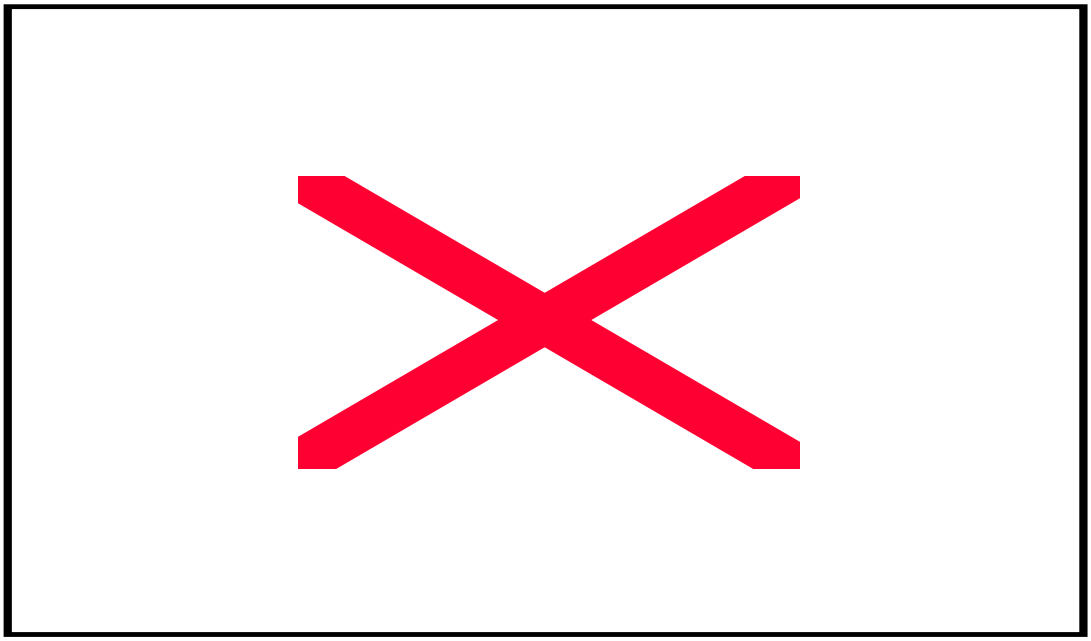


Exhibit 3.2 Income Statement



* The large non-operating expense in 2001 is a non-recurring cost for removal of fixed assets

Analysis of these statements indicates the following:

- Fixed assets have grown by approximately 50 billion Tg since 1997, financed primarily from the Japanese loan
- Inventories have increased significantly in recent periods due primarily to spare parts inventory.
- Accounts payable is increasing rapidly, primarily reflecting the debts to Baganuur Coal Mine.
- Accounts receivable at 30 June 2002 represent approximately six months of sales.
- Accounts Payable at the end of the second quarter of 2002 are in excess of Accounts Receivable, showing that UB4 owes more to its suppliers than is owed to it by its customers (the Distribution Licensees). This implies that, even if the company collected all its receivables (an unlikely event) it would still lack the cash to pay its suppliers.
- The Government of Mongolia's equity in UB4 has been deteriorating due to the poor financial performance of the company, showing that the value of the firm is being reduced each year.
- The cost structure of the company indicates that for every 100 Togrog of revenue, the company has costs of approximately:
    - 52 Tg for fuel
    - 28 Tg for depreciation expense
    - 10 Tg for salaries and related costs (Social Security, Labor Safety, etc.)

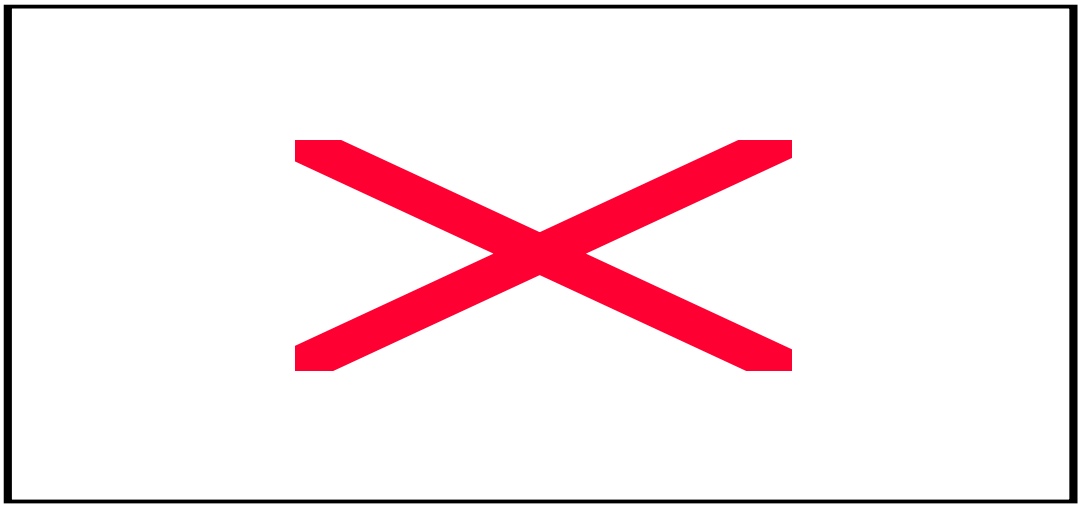
- 10 Tg for all other costs

3.3 INTERNATIONAL LOANS

The Company has significant long-term debt outstanding due to refurbishment work performed on the power station and financed by a loan from the Government of Japan. Phase 1 of the project has been completed at a cost of approximately 4.5 billion Japanese Yen (JPY) or 41.6 billion Tg, at current exchange rates. As discussed in Chapter 5, the objective of this phase of the project was to increase availability of the power station and reduce station use. It involved work on boilers 1 through 4 including replacement of the coal mills, conversion to direct firing, replacement of a portion of the water walls, and installation of a new automatic instrumentation and control system.

Following the restructuring of the energy sector in 2001, the Ministry of Finance and Economy developed on-lending agreements with the newly established companies for the outstanding international loans. This loan calls for interest to be paid on the outstanding balance at the rate of 2.5% per year. Principle repayment begins in 2004 with semi annual amounts of 128.4 million JPY (1.2 billion Tg). Exhibit 3.3 shows the debt service requirements for which UB4 is responsible. Detailed information is contained in Attachment A.

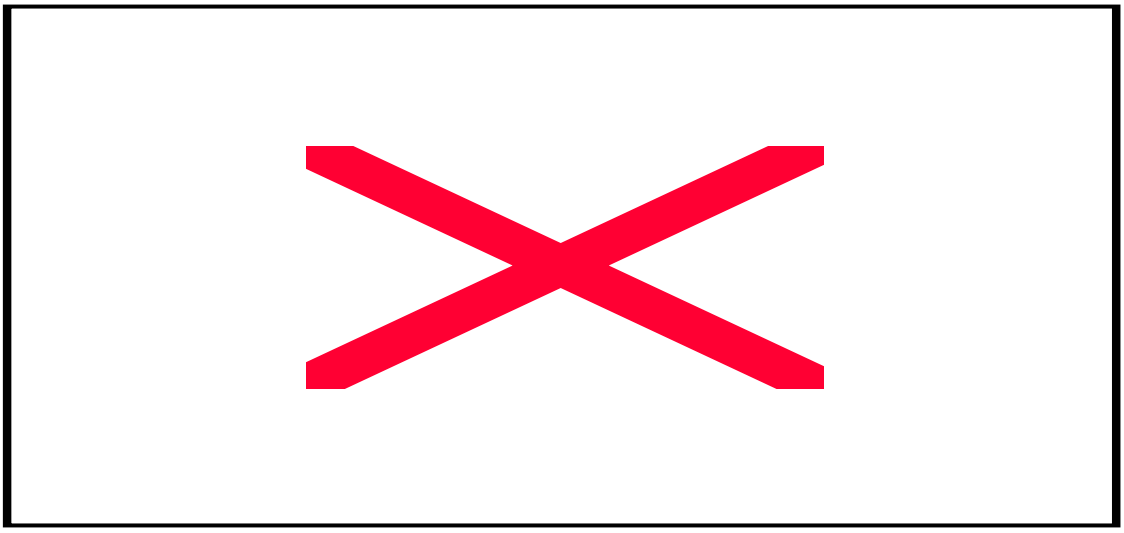
Exhibit 3.3 Debt Service – Phase 1



In 2001, Phase 2 of the project began. This phase is for boilers 5 through 8 and involves similar work to that performed on boilers 1-4 in phase 1. In addition, the induced draft fans and forced draft fans will be replaced as well as the exciters on Turbogenerator Nos. 1 and 5. As a result of completion of this work, the power station will no longer be boiler limited, efficiency will slightly improve, station use will be reduced, and cycling time will be reduced. The latter is important since this power station is being utilized to follow load throughout the day, as discussed in Chapter 5.

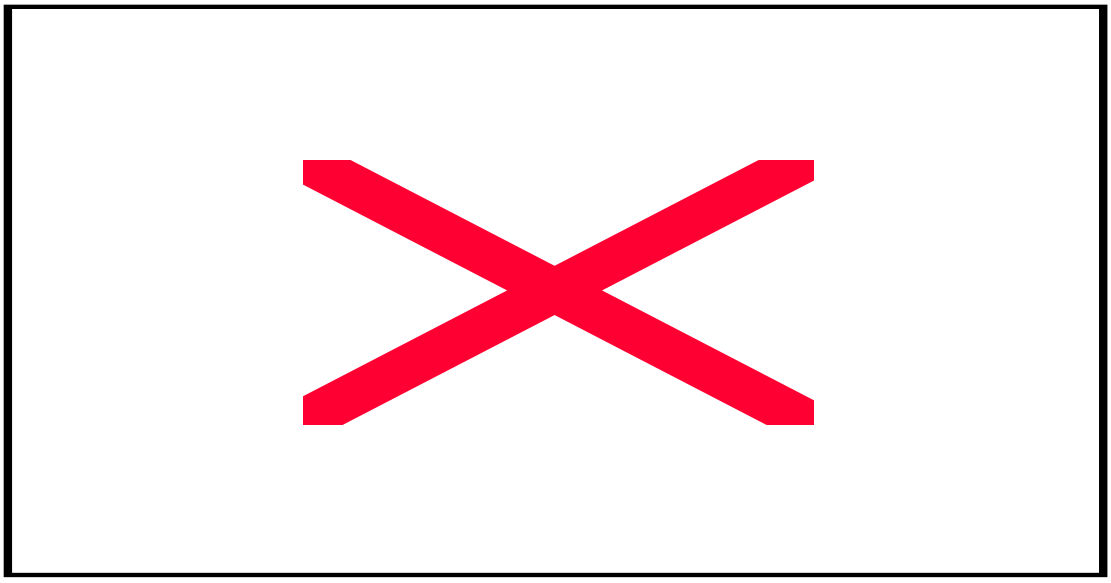
The credit extended by the Japanese government for this loan is 6.139 billion JPY (approximately 57 billion Tg at current exchange rates). The interest rate on the loan between the Government of Mongolia (GOM) and the Japanese Government is 0.75% per year. The on-lending rate from the GOM to UB4 is 1.1% per year. The estimated debt service for UB4 pertaining to this loan is shown in Exhibit 3.4. Details are contained in Appendix A.

Exhibit 3.4 Debt Service – Phase 2



It is interesting to note the total estimated debt service for both loans as shown in Exhibit 3.5.

Exhibit 3.5 Total Debt Service



It is informative to put the debt service requirements in perspective. The net annual electrical output of the power station is approximately 1,600 GWh. For the years 2002 and 2003, the debt service of approximately 1 billion Tg represents 0.6 Tg per kWh sold. This increases to 2 Tg/kWh in the 2004-2007 period and to 4 TG/kWh in 2008, declining

thereafter. For comparison, at the present time fuel cost is approximately 15 Tg/kWh and total revenue is approximately 23 Tg/kWh. Tariffs in future years will have to be increased to recognize the increase in interest expense. The current tariff policy provides for recovery of international loan costs.

International loans involve a loan from an international source (country, development bank, etc.) to the Government of Mongolia. The loan is generally denominated in the currency of the lender, which in the case of the loans for UB4 is Japanese Yen. The Government then "On-lends" the funds to the appropriate recipient of the project. It should be noted that there is significant exchange rate risk associated with these loans since they extend over significant periods of time. A prudent commercial entity exposed to such risk would hedge that risk with an appropriate financial arrangement, or series of arrangements, involving a cost to the entity. UB4 is a rather small entity and does not have the expertise or financial resources to effectively hedge that risk.

It is, therefore, recommended that the GOM assume the exchange rate risk associated with this and other international loans. It is the only entity in Mongolia that (through the Ministry of Finance and Economy or the Bank of Mongolia) has the expertise and resources to either hedge the risk, or bear the potential loss if the Togrog depreciates relative to the other currencies. If this recommendation is accepted, the on-lending agreements should be rewritten to denominate the debt service (interest and principle payments) in Togrog as opposed to the foreign currency. Of course, the GOM may decide to pass along all or part of the cost of hedging to UB4 and the other companies through the on-lending agreement.

3.4 FINANCIAL PLAN

The company prepares a financial plan (budget) for the upcoming year and monitors progress against the budget throughout the year. For the year 2002, the summary plan is shown in Exhibit 3.6. The detailed plan is shown in Appendix A.

Exhibit 3.6 Plan for 2002

Summary of the Plan for the Year 2002

Description	Unit of Measure	Amount
Gross Generation	Millions of kWh	1,983.8
Station Use	Millions of kWh	408.7
Sales	Millions of kWh	1,575.1
Heat Sales	Millions of Gcal	2,653.5
Fuel Rate - Electric	Grams per kWh	386.0
Fuel Rate - Heat	Kg per Gcal	183.8
Revenue – Electricity	Millions of Tg	35,764
Revenue - Heat	Millions of Tg	9,617
Total Revenue	Millions of Tg	45,381
Fuel Expense	Millions of Tg	23,418
Depreciation	Millions of Tg	11,524
Salaries and Related Expenses	Millions of Tg	4,459
Other Operating Expenses	Millions of Tg	4,776
Interest Expense	Millions of Tg	1,200
Total Expenses	Millions of Tg	45,377
Net Income	Millions of Tg	4

The plan reflects the fact that the tariff process (discussed in Chapter 7) provides for recovery of costs, including depreciation and interest, but does not provide a return on equity. Therefore, net income can be expected to be approximately zero.

On a monthly basis, the Planning Department monitors progress against the plan and reports the results to the management team. For the first half of 2002, the summary results are presented in Exhibit 3.7

Exhibit 3.7 Actual vs. Plan

Actual Results Compared to Plan for the First Half of 2002

Description	Unit of Measure	Plan	Actual
Gross Generation	Millions of kWh	1,000	1,000
Station Use	Millions of kWh	206	206
Sales	Millions of kWh	794	794
Heat Sales	Millions of Gcal	1,417	1,423
Fuel Rate - Electric	Grams per kWh	372	378
Fuel Rate - Heat	Kg per Gcal	184	185
Revenue – Electricity	Millions of Tg	18,283	18,249
Revenue - Heat	Millions of Tg	5,137	5,225
Total Revenue	Millions of Tg	23,420	23,474
Fuel Expense	Millions of Tg	12,148	12,636
Depreciation	Millions of Tg	5,825	6,353
Salaries and Related Expenses	Millions of Tg	2,485	2,055
Other Expenses	Millions of Tg	2,386	2,851
Interest Expense	Millions of Tg	600	852
Total Expenses	Millions of Tg	23,444	24,793
Net Income	Millions of Tg	(24)	(1,273)

As shown in Exhibit 3.7, net income is negative 1.3 billion Tg as opposed to the breakeven level assumed in the plan. This represents approximately 5% of revenue. The level of output for both electricity and heat is as planned as well as the amount of revenue. The variance, therefore, is in the expenses. The primary reasons for the variance are as follows:

- Fuel expense is approximately 500 million Tg (4%) greater than planned due to the increased use of mazut for cycling the unit more than planned, at the direction of the dispatcher.

- Depreciation expense is higher by approximately 500 million Tg (9%) due to more fixed assets being placed in service at the end of 2001 than assumed when the budget was prepared.

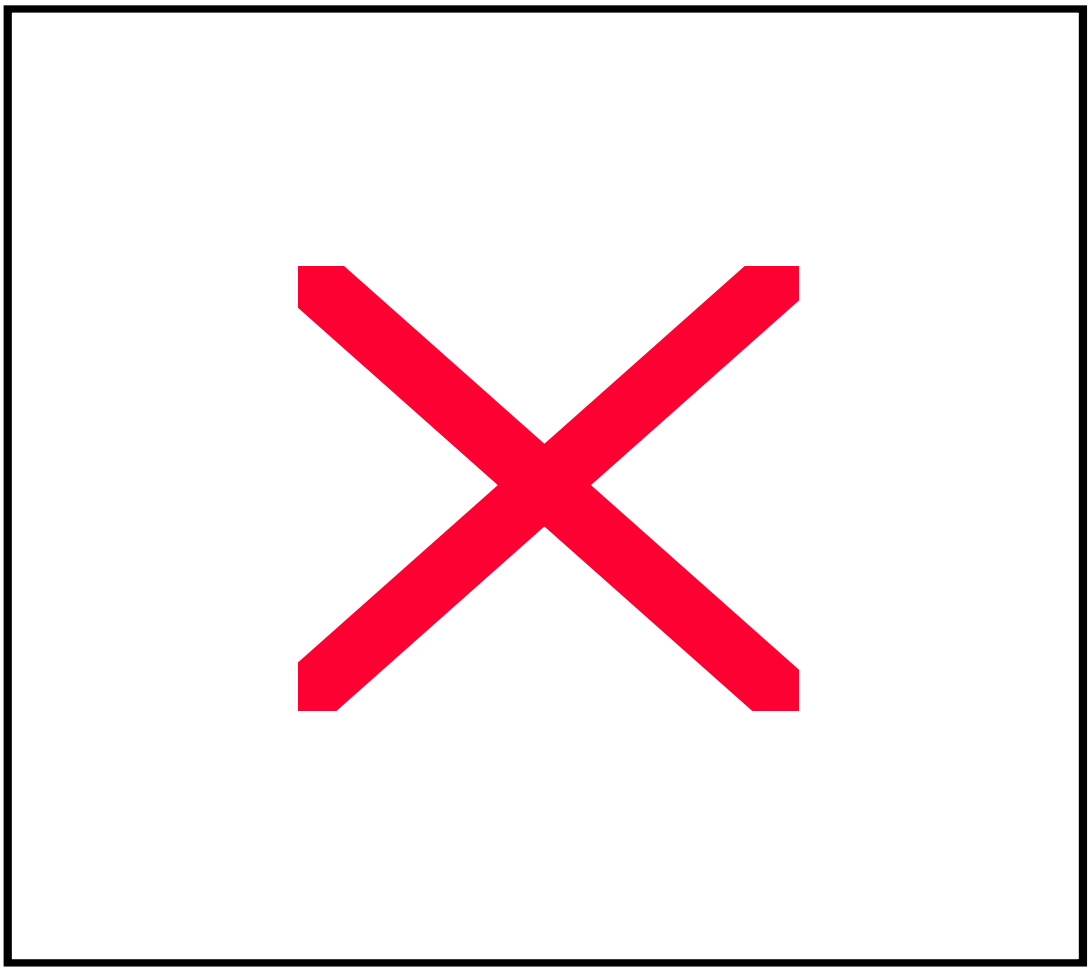
- Salaries and related expenses were lower than forecasted by approximately 400 million Tg (17%) due to no bonus being paid to employees due to the negative income and the fact that there are 53 fewer employees (3.7%) than planned.

- Interest expense was 252 million Tg greater than budgeted due to short-term interest expense that was not anticipated. The company only budgeted for international loan expense but has been required to utilize short-term debt, primarily to pay coal suppliers, since it has not been receiving sufficient cash from the distribution companies.

3.5 LONGER TERM FORECAST

The company also prepared a longer term forecast for the period 2002 through 2005. This could actually be referred to as an intermediate term forecast. The plan, as presented by the UB4 Planning Department is shown in Exhibit 3.8.

Exhibit 3.8 Plan for 2002 - 2005



3.6 DEBT RESOLUTION

At the time of Corporatization in 2001, UB4 had significant amounts due from the distribution entities for power delivered but not paid for in prior periods. In addition, UB4 owed significant amounts to coal mines for fuel received but not paid for. Other generation entities were in similar positions. Distribution entities owed generators for power they received in prior periods but were unable to pay since retail customers had not paid for power they received in prior periods. This situation is common in many developing countries and is often referred to as the “Cycle of Debt”.

In September 2001, a recommendation including a variety of alternatives was given to the Government of Mongolia (See appendices A-11 and A-12). The recommendation was

based on the distribution entities first writing off their "Hopeless" accounts receivable and taking vigorous action against those customers that had the ability to pay. It also was recommended that the coal companies discount the debt from the generators. The shortfall between the amount of customer debt collected and the discounted amount due to the coal companies would then be collected from customers in the form of a surcharge over a period of time. Commercialization will only be effective if debt is at a level each company can deal with and remain financially viable.

That recommendation has not been implemented, however, and the debt cycle continues. This is a situation that UB4 cannot solve on its own. It could negotiate discounts from the coal suppliers for past due amounts, however, it has no control over the Distribution Licensees to obtain payment on the old debts they owe to UB4. It is recommended that the Government of Mongolia review the debt resolution recommendation again and implement it or arrive at an alternative solution and move forward. Without government intervention, the individual licensees cannot solve the problem.

3.7 FINANCIAL ANALYSIS

In the new industry environment, the company must adopt a more commercial or business orientation. In prior years, most decisions, including investment decisions, were made externally by Ministry of Infrastructure personnel. In the future, the company will be responsible for managing its operations and investments in an economic manner.

Since the topic of financial analysis is a new one for many energy sector personnel, a capacity building seminar on financial analysis was conducted for 23 participants including the management team and selected engineering and finance staff of UB4 on 12 June 2002. The seminar began with an introduction to the theory of economic and financial analysis, a session on "Time Value of Money", the importance of determining the cash flows from an investment, and the techniques of analyzing and evaluating the cash flows to determine if value is being received. Detailed applications, including the financial analysis of a coal mill replacement project, were presented, prior to a participant exercise that required the participants to perform a financial analysis. A copy of the seminar materials is included as Appendix C-2.

It is recommended that the management team require engineers and finance specialists to perform a financial analysis on future projects as a prerequisite to presenting them to management for approval. In fact, to the extent that UB4 management has authority to determine individual components of the Phase 2 Refurbishment project, it should perform a financial analysis on the various components of the project.

3.8 SUMMARY OF RECOMMENDATIONS

In this chapter there were four specific recommendations made that can be summarized as follows:

- The Company should continue to improve and move toward IAS compliance over the next few years. This would provide several benefits, including the fact that strategic investors place a high importance on financial statements in compliance with IAS.

- The Government of Mongolia should assume the exchange rate risk associated with international loans. It is the only entity in Mongolia that (through the Ministry of Finance and Economy or the Bank of Mongolia) has the expertise and resources to either hedge the risk or bear the potential loss if the Togrog depreciates relative to the other currencies. If this recommendation is accepted, the on-lending agreements should be rewritten to denominate the debt service (interest and principle payments) in Togrog as opposed to the foreign currency.
- The Government of Mongolia should Implement the September 2001, recommendation given to it to resolve the major debt issues of the Licensees relating to customer accounts receivable, debt to coal suppliers, and the debt from the distribution licensees to the generators.
- The management team should require engineers and finance specialists to perform a financial analysis on future projects as a prerequisite to presenting them to management for approval. In fact, to the extent that UB4 management has authority to determine individual components of the Phase 2 Refurbishment project, it should perform a financial analysis on the various components of that project.

4. MANAGEMENT INFORMATION SYSTEMS

4.1 MIS AND IT SYSTEMS AT POWER PLANT 4

4.1.1 Development of MIS Systems

Management Information Systems are not an end unto themselves. Their purpose is to provide the entire organization (the management team, technical specialists, operational staff, customer service personnel, financial people, etc) with the information they need to effectively and efficiently carry out the processes they are responsible for. The systems should be able to help the Company determine "Where they have been" and "Where they are going" so the management and staff can take action to improve the critical processes and achieve the goals they are striving for.

Development of management information has progressed over the lifetime of UB4 aimed at measuring plant operational performance. Since separation of UB4 into a separate and independent business unit there is a need for a wider variety of management information particularly financial information. During the mid to late 1990's a project was funded by the Asian Development Bank (ADB) to develop and install computerized financial (Platinum) and billing systems into the entities that comprised the Central Electricity System (CES) of Mongolia. A project team was formed within the Energy Authority (EA) that comprised Mongolian financial and IT personnel with power industry experience, supplemented by consultants from Arthur Anderson. This team developed the systems, trained entity staff and installed the necessary computer hardware and application systems in UB4 in 1998/99.

Support for any system problems was provided by the EA project team at first but this team was disbanded in February 2000 and from that point UB4 has had sole responsibility to maintain and develop these systems.

4.1.2 Financial Systems

The financial systems are based on the Platinum package and UB4 has the later version – "EPIC" that is Microsoft Windows based and provides some level of integration between the general ledger (G/L) and sub ledgers. UB4 has installed the general ledger, supply and materials subsystems. Data from these systems is re-keyed into the General Ledger. Payroll is on a separate system and analyzed data is manually entered to the G/L at the end of each month.

At the end of each month the system produces an income statement and balance sheet. That information is included in Appendix A.

The final consolidation and budget comparison is done using separate Microsoft Excel reports by the Economist who needs to re-enter data. These reports meet the requirements for reporting to government regulatory bodies in Mongolia.

4.1.3 Computer Equipment

UB4 has between 45 and 50 computers installed in the various departments of the office and plant. Of these, 32 computers are connected into a Local Area Network (LAN). A description of the LAN and computer equipment installed is included in Appendix D-4.

Many of the computers are older 486 styles so are slow and cannot use later versions of software products. The survey of computer usage carried out in May 2002 indicates that at least 8 of these computers need to be upgraded or replaced. The computer usage survey is included in Appendix D-1.

The majority of these computers are used for departmental specific activities and although connected to the LAN very little use was being made of it to transfer information between departments.

4.1.4 Analysis of Present Systems

We reviewed the present UB4 reports by conducting a presentation on MIS to 30 + members of the executive group. A copy of the presentation is includes in Appendix C-3. Following this presentation an executive group was formed to work with the consultants. The group comprised representatives from Planning, Engineering, Finance and IT. The working group then followed several steps to determine the MIS information that UB4 required.

Firstly the working group developed a model of the organization according to business functions as shown in Appendix D-2. This model showed the following seven functional groupings:

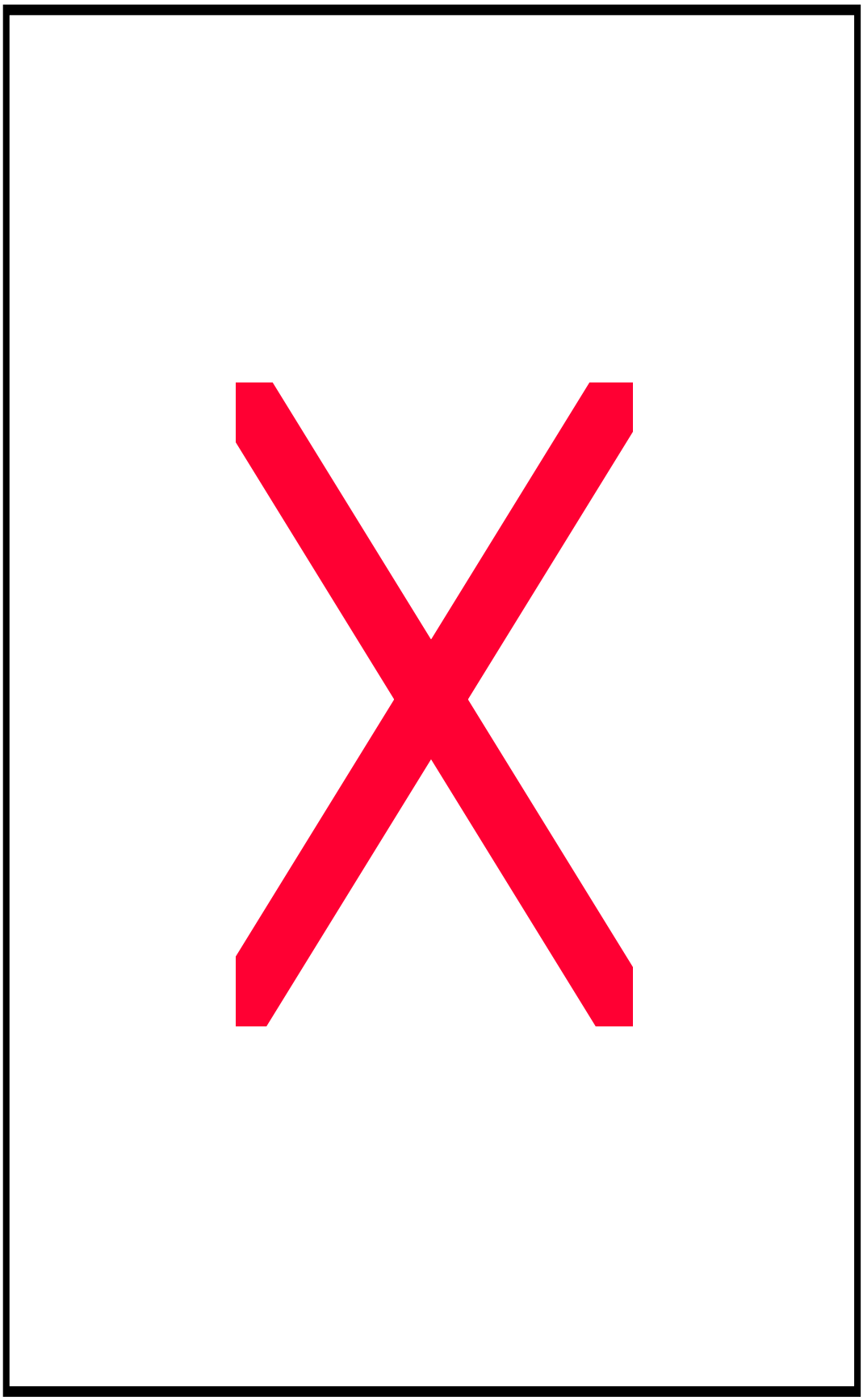
- The Governing Board
- The Executive Director and Management Team
- Plant Operations
- Plant Maintenance
- Supply of spare parts and inventory
- Provision and management of Human Resources
- Financial Management and Administration.

Secondly the working group identified what were the Critical Success Factors (CSFs) for each of those business functions and determined how each CSF could be effectively measured. The result of this analysis is contained in the report in Appendix D-2.

The working group then reviewed the present management reports to identify where current information was satisfactory and where additional information would be beneficial. A report was then produced that described each report, identified which department would be responsible for producing the report, identified which department would receive the report and the frequency that each report would be produced. The consultants then applied these recommendations to the first quarter 2002 results for UB4. The report on the recommendations is shown in Exhibit 4.1.

Finally this material was packaged together with an Executive Order for the Executive Director to sign to authorize the implementation of these recommendations. The Executive Order is in Appendix D-5.

Exhibit 4.1 Management Reporting



4.1.5 MIS Management

The Chief Accountant is responsible for financial systems and the Manager Engineering is responsible for supervision of IT technical staff. Ideally there should be a manager for the overall IT systems of the organization who would take responsibility for development, implementation and maintenance of all the systems. We have attached a job description for such a role in Appendix D-3.

4.2 ADEQUACY OF PRESENT IT SYSTEMS

The present systems are providing a level of support for this organization but require considerable manual effort to produce the management reports at the end of the month and quarter. The following issues were identified and discussed with the executive group:

- Much of the IT equipment was installed in 1998/9 and is now lacking in capacity and not capable of being used effectively on the LAN or upgraded to later versions of software.
- Whilst information is being produced much of it is being prepared manually which is holding up its production and limiting the time when it is useful to assist management.
- Data must be manually compiled to provide reports to ERA and other governmental agencies.
- UB4 has an improved version of the Platinum General Ledger software program that does produce financial reports. Summarized reports are produced monthly and full reports quarterly that go to the Governing Board and regulatory agencies.
- The financial and supply systems are discrete from payroll, receivables, stores and materials systems so analyzed figures from these systems are manually entered into the G/L before financial reports can be produced.
- There is a need to set budgets by cost center and measure actual performance compared to budget in the reports to management.
- The organization needs to monitor cash flow, as in a commercialized enterprise availability of cash is vital.
- Although a local area network has been installed to link 32 computers, information is not transferred electronically but by diskette or paper record.
- The Staff is not making use of the local area network and more training needs to be given to encourage its use by management.
- Performance reports need to be produced to relate power production to the cost of that production to encourage management to reduce production costs wherever possible. At present production is measured on its ability to keep power in the network and although that is an important measure, it should be related to the level of efficiency in producing power.
- Whilst management is grappling with the need to operate in the new commercial environment there is also a need to communicate effectively with the workforce who are also unsure about the impacts of commercialization on their future roles.

- Electronic backup for these systems is inadequate. Generally back up is being done on paper records or on the same computer system, as the original file so if the equipment fails both records will be lost.
- Additional protection against computer viruses needs to be undertaken.

4.3 FUTURE DIRECTIONS FOR MIS/IT

UB 4 is a large and important power plant that is comparable to similar plants in other countries. As UB4 commercializes its processes the following developments would be expected to occur in the provision of MIS and IT systems.

MIS/IT Systems will become increasingly important for management to use in technical, production and financial decision-making. More of the organization's data will be increasingly collected by electronic methods and stored in a local database of information that will be available to staff using PC's via a local area network (LAN).

Managerial skills in the use of MIS will be upgraded to enable all managers to access and use the stored information by way of their own PC's connected to a Local Area Network (LAN) which in turn will be connected to a local database of information.

The management of the network and provision of IT facilities will be under the management of an MIS/IT Manager who will be assisted by a small team of technical specialists that will manage the day to day operations of the network and provide training as well as on call support to users.

The applications such as General Ledger/Financial reporting, Payroll, Maintenance Management, and Supply will be the responsibility of the respective line managers for those functions. These managers will make decisions about when these systems will run, who will have access to these systems and what new features will be developed for these systems. The IT department will ensure that these systems are available and that the data in them is secure.

The Company will establish common standards for the software available on the network for such systems and applications as the version of the Microsoft operating system to be used by all staff, Excel, E-mail, Word processing, Power Point and data storage so that all equipment is compatible and users can exchange data seamlessly. These applications will be available to all managers and supervisory staff to use in accordance with access control related to their function. The overall installation will be protected by virus control software to prevent any infection to UB4 users.

Important data will be regularly stored in secure back up files to prevent inadvertent loss in case of equipment failure or fire.

The UB4 network will be connected to a Wide Area Network (WAN) throughout UB that is managed by the National Dispatch Center. At the beginning, this network will be used for advising dispatch instructions to UB4 and for UB4 to report data to the various regulatory agencies such as the ERA. As the sector develops to encourage dispatch of power based on the lowest cost (economic dispatch) UB4 will use this network to communicate cost and operational information to the dispatcher. To support economic dispatch, UB4 will need to have developed its costing systems to the point where it is confident of the actual cost of producing power. These bids will be supported by computer-based models that

predict the output for UB4 under various dispatch scenarios. In addition accurate dispatch data will be recorded and used to reconcile generation transmitted with the records of the National Dispatch to enable payment to UB4 to be made.

The Company will utilize computerized maintenance planning applications that will plan on-going maintenance, order necessary supplies from the store or a supplier, keep track of labor inputs and record the cost of maintenance into the company financial records.

The financial systems will be supported by budgets prepared to the section level of the plant and section managers will receive monthly reports comparing their actual expenditure against their budget and be asked to explain any variation.

The IT systems will produce all management reports and replace manually prepared reports.

The Company will manage their MIS/IT systems by a working party of senior executives who will approve the ongoing IT strategy and requests for major changes to the systems. They will review a monthly operational report from the MIS/IT Manager. The MIS/IT manager will be aware of IT changes taking place within the National Dispatch Center, ERA and other energy organizations and ensure UB4's systems are being adapted to conform with energy sector requirements.

4.4 RECOMMENDATIONS FOR MIS DEVELOPMENT

The following are our recommendations to strengthen the MIS systems at UB4. These recommendations were discussed with the UB4 executive group:

- Create the position of MIS Manager and give that person overall responsibility for planning and management of the organizations IT and MIS systems. A job description for such a position is included in Appendix D-3.
- Authorize the MIS Manager to develop a plan and budget to upgrade computer systems, extend the LAN in HO and the plant and manage hardware and software maintenance.
- Develop a plan to train staff in the use of the MIS system.
- Insure that IT management is aware of the use of MIS systems in other developing countries.
- Include monthly and year-to-date budget amounts in financial reports and compare actual results to the budget along with explanations of the reasons, determined by department managers, for the variances.
- Prepare cash flow forecasts and monitor these against actual cash flow.
- Depreciate IT hardware and software over a four-year period and use that depreciation to fund the purchase of replacement equipment and software upgrades.
- The Company needs to be able to produce accurate and timely monthly financial reports. It needs to enable data to be automatically transferred from the sub ledgers to the general ledger system and the general ledger system needs a reporting module that will produce monthly and year to date profit and loss and balance sheet reports including budget comparisons.

- A short-term plan has been developed to enhance and extend some sections of the IT and network infrastructure including equipment that can be financed from the current UB4 budget. We recommend that the Company also develop a four-year plan.
- The working group has identified the roles and responsibilities of the functional business units in UB4 and that has led to a draft of the type and frequency of financial and operational management information that each should receive.
- The consultants and the working group have also analyzed the first quarter, 2002 results and developed a number of performance indicators. These have been further analyzed to identify the division responsible for producing each and at what frequency as well as identifying who should receive this information. A draft Executive Order has been developed for UB4 to issue and is included in Appendix D-5.
- Approve the Executive Order and start producing the proposed level of reporting.
- Improve the daily cost of production reports by extending the range of items monitored and recording this information electronically so it can be distributed quickly to concerned executives over the LAN.
- Training should be provided to management on the facilities available in the local area network and encouraged to make use of this tool to speed communication within the organization
- IT activities such as security, virus control and back-up need to be reviewed and strengthened.
- Acquire the ability to electronically transfer information to ERA and other outside organizations in a secure manner.
- As the organization becomes more computerized there is a need to ensure that it has adequate trained IT staff or support contracts with outside organizations to meet its needs for hardware and software support in the future.
- Managerial staff should be trained to read and understand the managerial reports being produced.

The reader is reminded that the MIS functions and processes are not an end unto themselves. Rather, they are tools for the entire organization to develop and utilize in order to carry out the processes for which they are responsible for in an effective and efficient manner. Therefore, the above recommendations can be viewed as supporting many of the other recommendations in this report and helping UB4 to move forward in the more commercial environment.

5. GENERATION – THE PRIMARY PROCESS

5.1 GENERAL

Obviously, Generation is the primary process of the Company, producing its "Products" for sale (electricity, hot water, and steam) and consuming the majority of its resources. This is probably the process that the management teams have primarily focused on since the initial construction of the power station and the one that the employees have significant expertise, developed over a long period of time, to carry out.

In the newly restructured power sector environment, however, this process requires a somewhat different focus. The output measures will gradually become more market oriented and commercialized. For example, quantity and quality of service will be based on customer needs as opposed to the dictates of a government ministry. Efficiency will be measured by cost per unit of output or capacity and managed by the company in order to provide value to the company, as opposed to arbitrary (and often unreasonable) spending restrictions being imposed by various government entities. Also, as the sector and the company move to a more commercial environment, the management team's job becomes more complex. The other processes in the value chain (Sales & Service, Pricing, Billing & Collection, and Administrative) require management attention to a much greater extent than in the past. For now, however, let's focus on the Generation Process.

5.2 SCOPE OF THE REVIEW

The review of the generation process conducted for this commercialization review is primarily focused on the review of operations from a "Business" perspective as opposed to a detailed technical review. An initial meeting to establish the scope for this work was held with Mr. Bayarbaatar, Executive Director, and his management team. He indicated that the Government of Japan was providing assistance on the technical operation of the power station as a component of the overall Phase 2 rehabilitation work. This was reasonable since the rehabilitation work is aimed at improving availability and efficiency and reducing station use and cycling time. Mr. Bayarbaatar agreed that the commercialization work should not duplicate technical assistance being provided by the Japanese.

5.3 OPERATIONAL FACILITIES

The Power Station is the Combined Heat and Power (CHP) type, producing electricity and heat in a combined cycle and also providing high-pressure steam to adjoining industrial facilities for their use. The electricity produced is provided at 220,000 and 110,000 volts to the Central Electricity System of Mongolia, serving the major cities of Ulaanbaatar, Erdenet, Darkhan, and surrounding areas. Hot water is provided in the winter and sold to Ulaanbaatar Heat Distribution Company for district heating and year around for the general hot water needs of businesses and households.

The power station was commissioned in stages over the period 1983 to 1991. It consists of 8 boilers designed to produce 420 tons per hour of superheated steam. There are six turbine generators with an installed capacity of 540 MW (3x100 MW and 3x80 MW). At the present time, however, the electrical capacity is approximately 432 MW. The power station burns coal, the majority of which is acquired from the Baganuur Mine, with a heating value of approximately 3,500 kcal/kg.

During the year 2001, the power station produced net electrical output of 1,553 GWh of electricity and 2.56 million Gcal of heat, hot water, and industrial processing steam.

5.4 REVIEW OF OPERATIONS

To put the current operational situation in perspective, it is helpful to review where we have been. In the case of the power sector in Mongolia, the situation was quite bleak as recently as the mid 1990s. While the Central Electricity System currently has electricity 24 hours a day and 7 days a week that has not always been the case. Significant problems were encountered including:

- Obtaining sufficient quality and quantity of fuel
- Obtaining replacement parts from foreign sources
- Tariffs far below the cost to produce electricity and heat resulting in a lack of operating funds

In the case of UB4, that resulted in the power station not being able to supply sufficient amounts of electricity and heat. The situation began deteriorating in the early 1990s as the effects of the lack of support from the former Soviet Union in terms of financial resources, parts availability, etc. began to hurt the sector. That is reflected in the operational information shown in the exhibits below. The situation was further aggravated by the fact that significant load was lost due to closure of many inefficient industrial facilities, military facilities, and the general decline of the overall economy.

Power Stations operate most efficiently when loaded close to full capacity, assuming proper levels of maintenance. As the load dropped due to the declining national economic situation and financial resources, spare parts, and equipment became scarce, the performance of UB4 suffered in many respects.

The best way to convey the operating information is through the following series of Exhibits. They display information for each year from 1990 through 2001 as well as for the first half of 2002 (denoted 1H2002).

Exhibit 5.1 Net Electricity Output

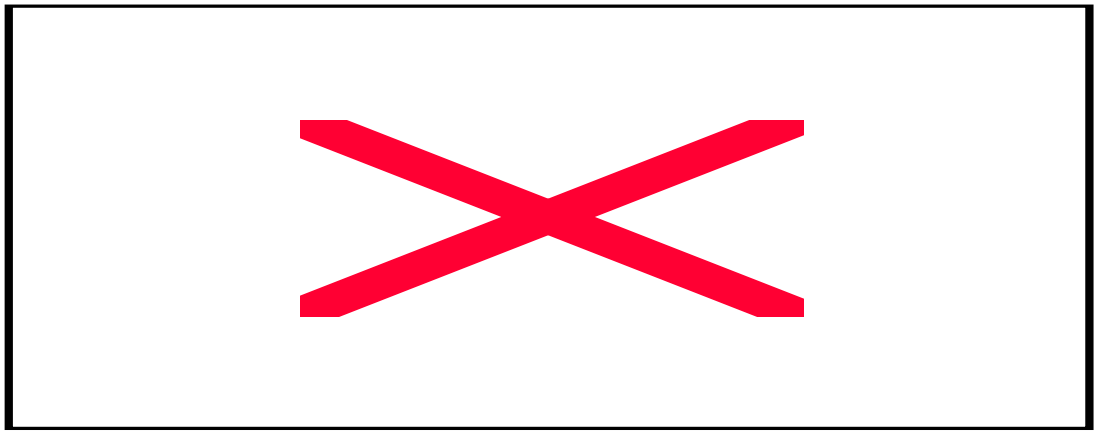
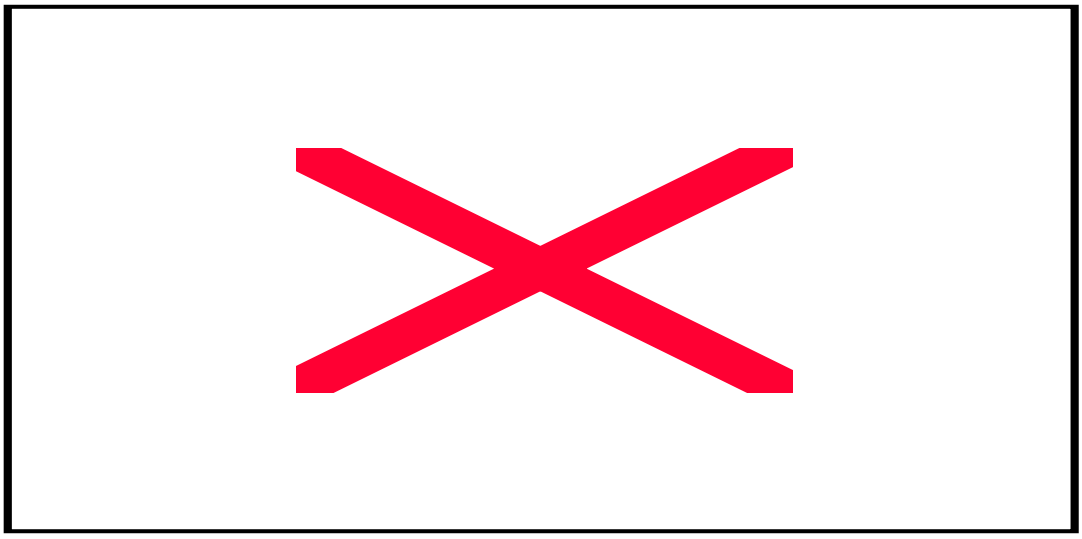


Exhibit 5.1 shows the decline in electricity output (net of station use) which is primarily due to the decline in customer demand and partially due to the fact that the power station could not provide sufficient output to meet even the reduced load due to the financial and technical operational problems.

Exhibit 5.2 Heat Output



Heat output did not decline to the extent of electric output, primarily due to the need to provide heat to residents and businesses due to the extreme cold conditions. It did decline, however, but is now at all time high levels.

The following Exhibits highlight key performance measures of efficiency:

Exhibit 5.3 Electric Fuel Rate

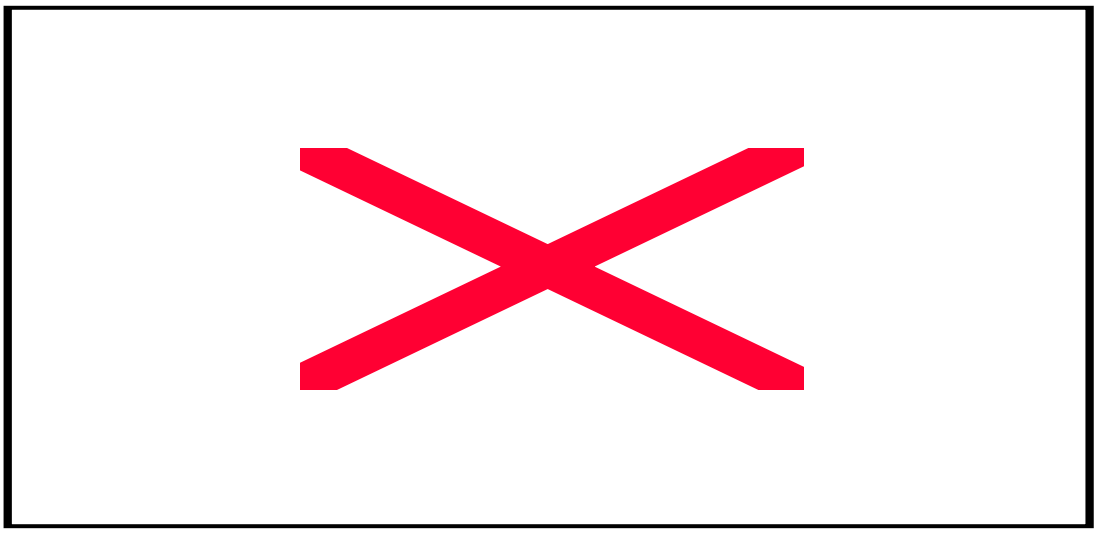


Exhibit 5.4 Heat Fuel Rate

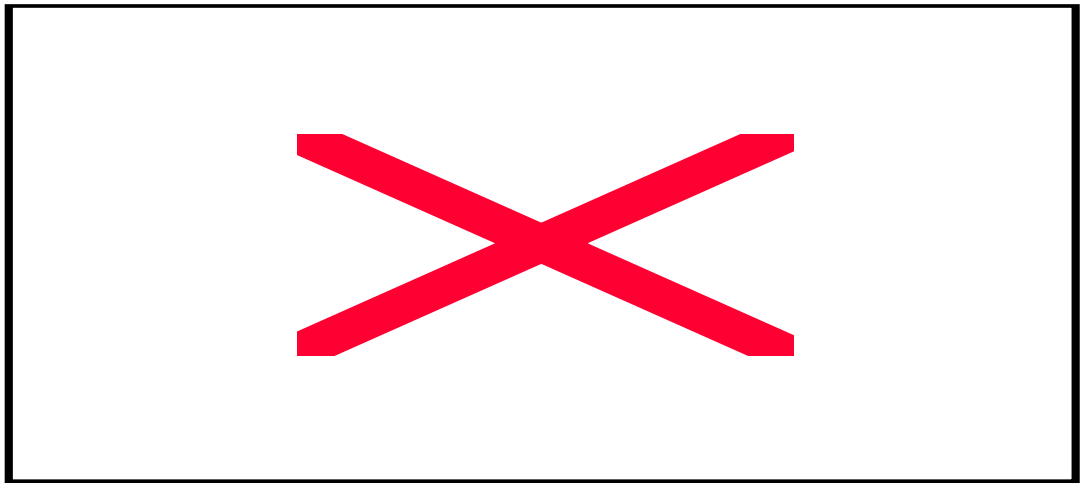


Exhibit 5.5 Mazut Utilized

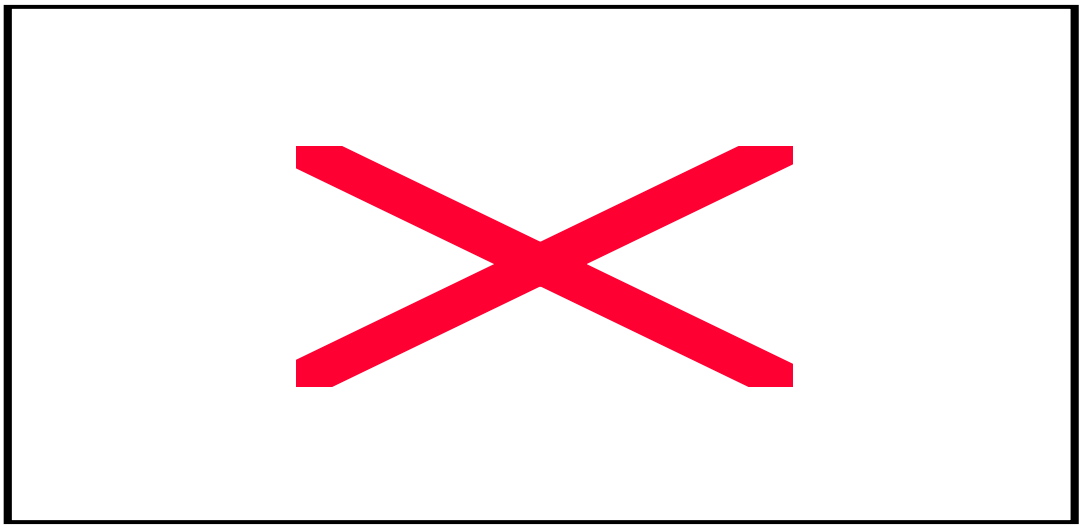
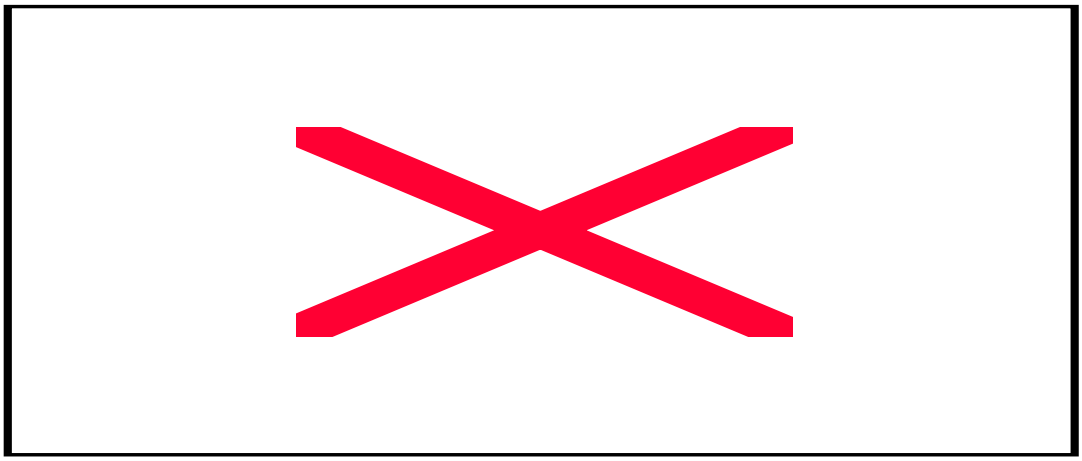


Exhibit 5.6 Station Use of Electricity



The “Electric Fuel Rate” shown in Exhibit 5.3 is a measure of the efficiency of a combined heat and power station in utilizing fuel to produce electricity. It is similar to the measure of “Heat Rate” used for a conventional condensing power station. “Heat Fuel Rate” (Exhibit 5.4) is likewise a measure of the efficiency of a combined heat and power station in utilizing fuel to produce heat output. These two measures are needed to recognize that the two “products” of heat and electricity are produced in a combined process and rely on engineering estimates and allocations of the fuel used in the power station. The objective of the power station operator is, obviously, to minimize the amount of fuel needed to produce the output. Small improvements in the fuel rate produce significant cost reductions, benefiting the Company and its customers.

The electric fuel rate deteriorated in the mid 1990s due to the lower level of output and the poor performance of the equipment. It has improved recently due to rehabilitation work completed during Phase 1 and is expected to show additional improvement as the Phase 2 work is completed over the next few years.

The management team must take advantage of the Phase 2 loan proceeds in the most optimal manner from an operational and financial perspective. In addition, operation and maintenance practices must focus on achieving improved fuel rates in the coming years. It is recommended that the management team set tough but realistic improvement targets for these measures for future years given the rehabilitation work planned as well as a review of operating and maintenance practices. Once the rehabilitation work is completed, sufficient resources must be devoted to periodic maintenance to prevent a recurrence of the situation in the mid 1990s. As discussed in Chapter 7, it is also recommended that the Company develop and propose an incentive mechanism to ERA in order that it has additional incentive to achieve the targets.

The amount of mazut used has declined significantly as shown in Exhibit 5.5. This is due to several factors including:

- Innovative operating practices developed in recent years to enable boilers to be started using a significantly lower percentage of mazut in relation to pulverized coal
- The reduced need to use mazut to compensate for very poor quality coal

The management team should continue to effectively utilize this costly fuel in the future.

The final key performance measure (highlighted in Exhibit 5.6) is Station Use. The exhibit includes total electricity use for which UB4 is responsible, including approximately 42 million kWh required to pump hot water for the central heating system. This represents approximately 2% of gross plant generation. The reader should, therefore, consider this when comparing the station use of UB4 to other power stations. The objective is, obviously, to minimize the amount of electricity needed to operate plant components such as pumps, motors, the fuel handling system, etc. Small improvements in this measure produce significant savings. Performance on this measure has deteriorated in recent years and that is a reason that the major refurbishment project is focused on making improvements in this area. The management team must take advantage of the Phase 2 loan proceeds in the most optimal manner from an operational and financial perspective. In addition, operation and maintenance practices must focus on achieving improved fuel rates in the coming years. It is recommended that the management team set tough but realistic improvement targets for station use for future years given the rehabilitation work planned as well as a review of operating and maintenance practices. As discussed in Chapter 7, it is also recommended that the Company develop and propose an incentive mechanism to ERA in order that it has additional incentive to achieve the targets.

5.5 SUMMARY OF RECOMMENDATIONS

This chapter has focused on power station main operations from a business perspective. As previously stated, the Japanese are also providing assistance in this area from a more technical perspective. The Company has faced significant obstacles and operational problems in the past 10 years. Some of those conditions have improved with financial and technical assistance from donors and the management team has made and continues to make improvements. Progress must continue, however, and there are significant improvements expected over the next few years. In addition to outside assistance, management and employees must strive for continuous improvement. Recommendations made in this chapter include:

- The management team must set tough but realistic improvement targets for the Key Performance Measures of:

  - Electric Fuel Rate
  - Heat Fuel Rate
  - Mazut Utilization
  - Station Use

- The Management team must take advantage of the Phase 2 loan proceeds in the most optimal manner from an operational and financial perspective to realize improvements on the Key Performance Measures
- Once the rehabilitation work is completed, sufficient resources must be devoted to periodic maintenance to prevent a recurrence of the situation in the mid 1990s.
- The Company should develop and propose an incentive mechanism to ERA in order that it has additional incentive to achieve the targets.

6. SALES AND SERVICE

6.1 GENERAL

In a commercial environment, every business must market and sell its products or services in order to survive. It must also keep its customers happy by providing a high level of service. In the context of a generation licensee in the power sector, this means:

- Having the power station available to produce electricity, heat, and steam at the time customers need it
- Being a low cost producer in order to be dispatched and maintain a high capacity factor
- Minimizing service interruptions to electric, heat, and steam customers
- Providing high quality output in terms of voltage and frequency control for electricity and temperature and flow regulation in the case of heat and steam
- Adhering to license conditions and the grid code
- Looking for ways to increase sales over time in order to provide additional sales and absorb fixed costs

6.2 INITIATIVES TO PURSUE

The first 4 items in the above list show that the Company must focus on the Generation process in order to provide customers a high level of Sales and Service. Focusing on the key performance measures in Generation will allow it to be available to a maximum extent at a low cost and minimize interruptions while providing quality output in terms of voltage, frequency and temperature control. These measures take on an increasingly important role as the energy sector moves to a more commercial environment. It will be several years, however, before the industry actually experiences competition in generation. UB4 is currently the low cost producer, a very significant factor in a competitive environment. The real competition will arise, however, when new generation is built. The Company will find itself at a competitive disadvantage if a state of the art generating unit is built in the Central Electricity System. Although that will occur many years in the future, now is the time to make improvements in order to remain economically viable in the future.

There are requirements imposed upon the Company by the ERA (in terms of license conditions) and the Dispatch Licensee (in terms of day-to-day operating levels and the Grid Code requirements) that the Company must adhere to. It is recommended that the Company review those requirements to determine their necessity and the level of performance required in light of operational economics. If the Company feels that requirements are unreasonable or result in other than least cost operation it should vigorously work within the legal and regulatory framework to change them.

One example is the requirement to follow the load throughout the day. First of all, the overall dispatch criteria must be more focused on dispatching on an economic basis. The Dispatch Licensee must be made aware of the cost to use UB4 to perform load following as opposed to the other smaller power stations or the use of Russian power. Having information on the variable or marginal cost of production from all sources is critical in making this decision. In many power systems, the low cost producer is dispatched first

given minimum load requirements (or "Technical Minimums" as they are called in Mongolia), transmission constraints, and other factors. The smaller power stations are then utilized to ramp up or down in small increments to follow load. If it is determined based on a financial analysis that UB4 is the economic choice to achieve load following, then an appropriate Ancillary Services Tariff must be developed as discussed in Chapter 7 of this report.

Another issue is that of the "Penalties" called for in the event UB4 does not meet license conditions, dispatch orders, grid code requirements, etc. As the sector moves to a more commercial environment, it is recommended that regulatory incentive mechanisms be used in place of many of the penalty items that currently exist. See Chapter 7 for a further discussion of incentive mechanisms.

In a more competitive environment, suppliers often must compete for customer load, not only with other licensees, but also with options that customers have for self-generation. An example in the current environment is the situation with the Erdenet Copper Facility. Erdenet Copper has recently investigated options of purchasing greater amounts of power direct from Russia as well as refurbishing an on-site generation unit previously decommissioned, as opposed to buying power from the Central Electricity System. UB4 must be aggressive, to the extent allowed by law, in retaining and increasing its sales since it has excess capacity. The Company should work with the ERA, the Single Buyer, the Distribution Licensees, and the large retail customers in order to help them understand its fixed (capacity) and variable (energy) costs in order that a least cost solution can be arrived at.

6.3 SUMMARY OF RECOMMENDATIONS

Recommendations made in this chapter include:

- The Company should review the requirements included in its license, the Grid Code, and the dispatch regulations to determine their necessity and the level of performance required in light of operational economics. If the Company feels that requirements are unreasonable or result in other than least cost operation, it should vigorously work within the legal and regulatory framework to change them.

- As the sector moves to a more commercial environment, regulatory incentive mechanisms should be used in place of many of the penalty provisions that currently exist.

7. PRICING

7.1 GENERAL

The company's pricing is subject to approval by the Energy Regulatory Authority (ERA), in accordance with the tariff provisions of the Law of Mongolia on Energy.

The tariff policy basically follows a traditional "Rate of Return" methodology using current costs and output levels. It is structured to allow licensees to recover their Prudent:

- Operating and maintenance costs (including depreciation)
- International Loan Interest
- Return on investment (rate base, including fixed assets and working capital) that allows for recovery of:
  - Interest on short-term loans
  - Return on equity

Therefore, if licensees can control their costs to the levels assumed in their tariff filings, they will have the opportunity to recover all their costs. If the management team takes the initiative to reduce costs, they can achieve higher earnings. In the case of UB4, meaningful cost reductions primarily involve reduction of fuel expense (improvement of the "Fuel Rate", and minimization of the amount of mazut).

At the present time, the ERA has determined that the return on equity will be limited to no more than 3% and in fact the rate included in the current tariff is close to zero.

A fuel cost adjustment mechanism has been developed for the ERA to utilize in the event that the unit prices for coal, mazut, or fuel transportation change from those used to establish the tariff.

7.2 TARIFFS FOR 2002

The tariffs approved by ERA at the beginning of 2002 were developed as follows:

Component			Amount (billions of Tg)
Operation and Maintenance (including Depreciation)			44.2
International Loan Interest			1.2
Return on Investment:			
Fixed Assets	100.5		
Working Capital	3.8		
Rate Base		104.3	
Rate of Return		0.52%	
Return on Investment			0.5
Total Revenue Requirement			45.9

The rate of return includes only short-term loan interest and a minimal return on equity. The amounts were arrived at based on the tariff submission of UB4 and adjustments made by the staff of the ERA. The adjustments were primarily for salary levels, reduction of station use, and reduced use of mazut for cycling of the boilers.

The Revenue requirement was then allocated as follows:

Electricity	29.3	
Plus subsidy to heat	7.0	
Net Electricity		36.3
Heat	16.2	
Less, subsidy from electricity	7.0	
Net Heat		9.2
Steam		0.4
Total		45.9

The resulting tariffs were as follows:

Electricity	23.05 Tg / kWh
Heat	3,550 Tg / Gcal
Steam	5,937 Tg / Gcal

Tariffs were subsequently adjusted in July to reflect the increased cost of coal and transportation.

7.3 TARIFF ISSUES

The current tariffs are just adequate to provide recovery of costs. With the return on equity set at approximately zero, UB4 can expect to have net income of approximately zero. This assumes, however, that the cost levels used to set tariffs are adequate given the levels of operation.

As the reader can see, there is a significant subsidy for heat included in the electricity tariff. If there was no subsidy, the electricity tariff would be approximately 20% lower and the heat tariff would be approximately 75% higher. That assumes that the methodology used to allocate costs between electricity and heat is reasonable. The current methodology is not transparent and this issue is under review by the ERA and the Generation Licensees.

The tariff for generators is currently a single part tariff expressed in Tg / kWh. Ideally, the tariff should have two components, an availability component (Tg / KW) to cover the fixed costs, and an energy component (Tg / kWh) to cover the variable costs. The variable cost of production would then be more apparent to the Dispatch Licensee and economic dispatch could be used to perform real time dispatch.

The current tariff does not recognize the fact that UB4 is used for load following throughout the day. In order to follow the load, UB4 must cycle its boilers up and down

which requires the power station to utilize more mazut than in steady state operation. It is recommended that the company perform a detailed analysis of the incremental cost to cycle its boilers on short notice to follow the load and present that analysis to the ERA in order that an Ancillary Services tariff component can be developed and applied in the future.

Another enhancement that would improve the tariff process is the introduction of meaningful incentive mechanisms that would reward the company for operational improvements and cost reduction measures. Possible incentive targets could include items such as:

- Improvement in Power Station Availability
- Reduction of the Fuel Rates
- Reduction of Station Use

It is recommended that UB4 develop proposals for one or more incentive mechanisms and make a proposal to ERA for implementation. The mechanisms should be developed by determining a reasonable base level for a particular measure (say fuel rates) using historical data and recent demonstrated levels. If the actual performance over a period of time (say one year) is better by at least a given amount, then the tariff would be increased to provide UB4 with additional income. If the power station does not achieve the base level, then it would be penalized.

The tariff process is a new experience for all Licensees, including UB4. In the newly restructured environment, it is a very critical process that determines, to a large extent, the profitability of the company. The regulatory process of establishing tariffs begins with the Licensee performing a detailed analysis of its operations and costs, using that information to develop a tariff proposal, and presenting the proposal to the regulator with sufficient supporting detail. The "Burden of Proof" in a tariff process is the responsibility of the Licensee. It is the regulator's job to review the proposal for reasonableness, make any necessary adjustments in a reasonable and transparent manner, and set the resulting tariffs. It is recommended that UB4 devote sufficient time and resources to the tariff process in order to present its position in a detailed, transparent, understandable manner in order to have a successful outcome. The tariff proposal should include documentation of the initiatives that the company is undertaking to improve operations and reduce costs. This will provide the ERA with valuable information to convey to customers, the Government of Mongolia, and the general public as to the level of tariffs and any proposed changes. A recent analysis conducted by a Public Relations Advisor indicated that the public has a perception that the energy sector is not spending money in a cost efficient manner. This perception exists in many countries and it is the responsibility of the Licensees (along with the ERA) to educate the public on actions being taken to operate efficiently and in a cost effective manner.

7.4 SUMMARY OF RECOMMENDATIONS

In the area of pricing, the following recommendations were made:

- The company should perform a detailed analysis of the incremental cost to cycle its boilers on short notice to follow the load and present that analysis to the ERA in order that an Ancillary Services tariff component can be developed and applied in the future.

- UB4 should develop proposals for one or more incentive mechanisms and make a proposal to ERA for implementation.

- UB4 should devote sufficient time and resources to the tariff process in order to present its position in a detailed, transparent, understandable manner in order to have a successful outcome. The tariff proposal should include documentation of the initiatives that the company is undertaking to improve operations and reduce costs.

- UB4 should provide the ERA with detailed information to develop a two-part tariff consisting of a Capacity (Availability) component to cover the fixed costs, and an Energy component to cover the variable costs.

8. BILLING AND COLLECTION

8.1 THE CUSTOMER BASE

The company has three classes of customers based on its output products:

- Electricity
- Heat
- Industrial processing steam.

Electricity is sold to the following Electricity Distribution Networks in the Central Electricity System (CES) by UB4 and the other generators (UB2, UB3, Darkhan, and Erdenet Power Stations):

- Ulaanbaatar EDN
- Darkhan EDN
- Erdenet EDN
- Baganuur EDN

Under the Single Buyer market structure currently being implemented, the electricity is actually sold to the Transmission Licensee, acting as the Single Buyer in the capacity of "Agent" for the distribution networks (wholesale customers).

Heat is sold to Ulaanbaatar Heat Distribution Office (UBHDN)

Steam for industrial processing is sold to 16 entities located near the power station. A list of those customers is included in Appendix B-6.

8.2 ELECTRICITY CUSTOMERS

New wholesale market mechanisms are being implemented in the CES under which power is sold by the generation licensees to the Single Buyer at the single part tariff in terms of Tg per kWh. The power is then resold to the distribution companies.

A new cash collection and distribution mechanism is also being put in place to be managed by a Market Banker performing the functions at the direction of the Transmission Company. As cash is collected daily from the retail customers of the EDNs, it will be distributed to licensees (Dispatch, Generation, Transmission, and Distribution) on a daily basis according to percentages approved by the ERA. This mechanism is being implemented in an attempt to equitably allocate cash collections to the licensees since collections from retail customers are currently less than 90% of the amount billed.

Since the EDNs are not collecting sufficient revenue, there is not enough cash to pay the generators. Since UB4 does not have control over the EDNs that subsequently utilize its output, it has little control over its cash collections. The amount of cash received by UB4 is, therefore, externally determined and primarily out of its control. Complicating this situation is the fact that that the ERA will not include an allowance for bad debts in the retail or wholesale tariffs. It is recommended that UB4 and the other licensees lobby ERA and the Government of Mongolia to (1) allow licensees to take more vigorous collection action with retail customers, including State Owned and Budget Entities, and (2) include

an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers.

The level of accounts receivable from the distribution licensees at 30 June 2002 is as follows:

Ulaanbaatar EDN	4,936 million Tg
Darkhan EDN	4,507 million Tg
Erdenet EDN	6,442 Million Tg
Baganuur EDN	2,349 Million Tg
TOTAL	18, 234 Million Tg

The EDNs will have to take aggressive action with their retail customers in order to reduce the amounts they owe to the generators for past sales.

In the future, the account receivable for electricity will be from the Transmission Company (the Single Buyer) and will obviously grow if collections from retail customers continue to be less than 100%.

8.3 ULAANBAATAR HEAT DISTRIBUTION OFFICE

UBHDO is the single customer of UB4 for heat and hot water. It also is the customer of the UB2 and UB3 Power Stations. At 30 June 2002, UBHDO owed 4.3 billion Tg to UB4 for heat delivered in prior periods. Since UBHDO is not collecting all amounts billed to its retail customers, it is unable to pay its suppliers the total amounts due. In a purely commercial market environment, the suppliers would take vigorous action in order to collect amounts due from wholesale customers, up to and including disconnection. This is not possible at the current time (and probably well into the future).

As recommended for the electricity business, UB4 and the other licensees should lobby ERA and the Government of Mongolia to (1) allow licensees to take more vigorous collection action with retail customers, including State Owned and Budget Entities, and (2) include an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers.

8.4 INDUSTRIAL STEAM CUSTOMERS

There are 18 industrial steam customers, a list of which is included in Appendix B-6. As of 30 June 2002, these customers owed UB4 163 million Tg, representing approximately 90 days of sales. UB4 has significantly more control over this class of customers than it has over electric and heat customers.

On 04 July 2002, I met with Mr. Tseeleesuren, Senior Specialist of the UB4 Sales Department to discuss billing and collection issues. Since he has limited influence over electricity and heat, he concentrates his efforts on the steam customers. As permitted by the Law of Mongolia on Energy, UB4 takes collection action against the steam customers. At that time, there were two customers that presented a collection problem. A meat processing company was disconnected for non-payment in April since it was 3 months in arrears. UB4 was working closely with a construction materials company that owed 20

million Tg. That customer resumed payment since they recently increased sales of their products.

The Government of Mongolia has a list of entities, however, that it will not allow suppliers to disconnect. If the Government wants to foster a commercial business environment, it is recommended that this practice be discontinued. If the Government decides that it is in the public interest to subsidize certain entities, then it should do so with public (budget) funds. The Government should not use the energy sector to provide non-transparent subsidies to those entities.

8.5 SUMMARY OF RECOMMENDATIONS

To strengthen the Billing and Collection process, the following recommendations were made in this chapter:

- UB4 and the other licensees should lobby the ERA and the Government of Mongolia to (1) allow licensees to take more vigorous collection action with retail customers, including State Owned and Budget Entities, and (2) include an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers.

- If the Government wants to foster a commercial business environment, it is recommended that the Government of Mongolia discontinue the practice of having a list of entities that it will not allow suppliers to disconnect. If the Government decides that it is in the public interest to subsidize certain entities, then it should do so with public (budget) funds. The Government should not use the energy sector to provide non-transparent subsidies to those entities.

9. ADMINISTRATIVE PROCESSES

9.1 GENERAL

In the prior 4 chapters, the primary processes of Generation, Sales & Service, Pricing, and Billing & Collection were discussed. In order for a company to efficiently carry out those core processes, it must have an effective administrative infrastructure in place. This chapter addresses the administrative processes.

9.2 PLANNING

The Company has a Planning Department consisting of 5 specialists who develop the annual plan (budget), monitor actual results as compared to the plan throughout the year, and develop longer-range plans. See Chapter 3 for a discussion of the plan for the year 2002, the progress toward that plan, and the plan for 2003 through 2005. Although the planning information contained in this report is summarized at the Company level, each department has a plan for its costs on a lower level of detail.

In a more commercial environment, planning takes on a much more critical importance to the success of the company. No longer are plans something to be developed and sent to a government ministry for incorporation into a broader plan. Now, the Company must plan in order to guide its operations and finances and modify that plan as appropriate when conditions change.

The Planning Department is knowledgeable about the company and its operations and financial situation. It must build upon this strength as it moves forward. Recommendations in the planning area include:

- Continue to monitor monthly actual results against the original plan for the year. In addition to the numerical data, prepare a report explaining the reasons for significant variances.

- As conditions change throughout the year, the department, in consultation with the operating departments, should develop what is sometimes referred to as a "Current Outlook" that reflects the actual results to date and the plan for the remainder of the year, adjusted for known or anticipated changes such as tariff adjustments, fuel cost changes, sales and output changes, etc. This will give the management team a more realistic picture of the near future that it can use to adjust operations and financial parameters.

- In addition to the income statement and detailed cost elements, the company should also develop a Cash Forecast or plan in order to better plan for short-term borrowings and overall working capital management.

9.3 HUMAN RESOURCES

9.3.1 The Company Organization

UB4 is a State Owned Shareholding Company operating under the Company Law of Mongolia. At the present time, its shares are 100% State Owned by the following State Agencies (its Shareholders):

- Ministry of Infrastructure (41%)
- Ministry of Finance and Economy (20%)
- State Property Committee (39%)

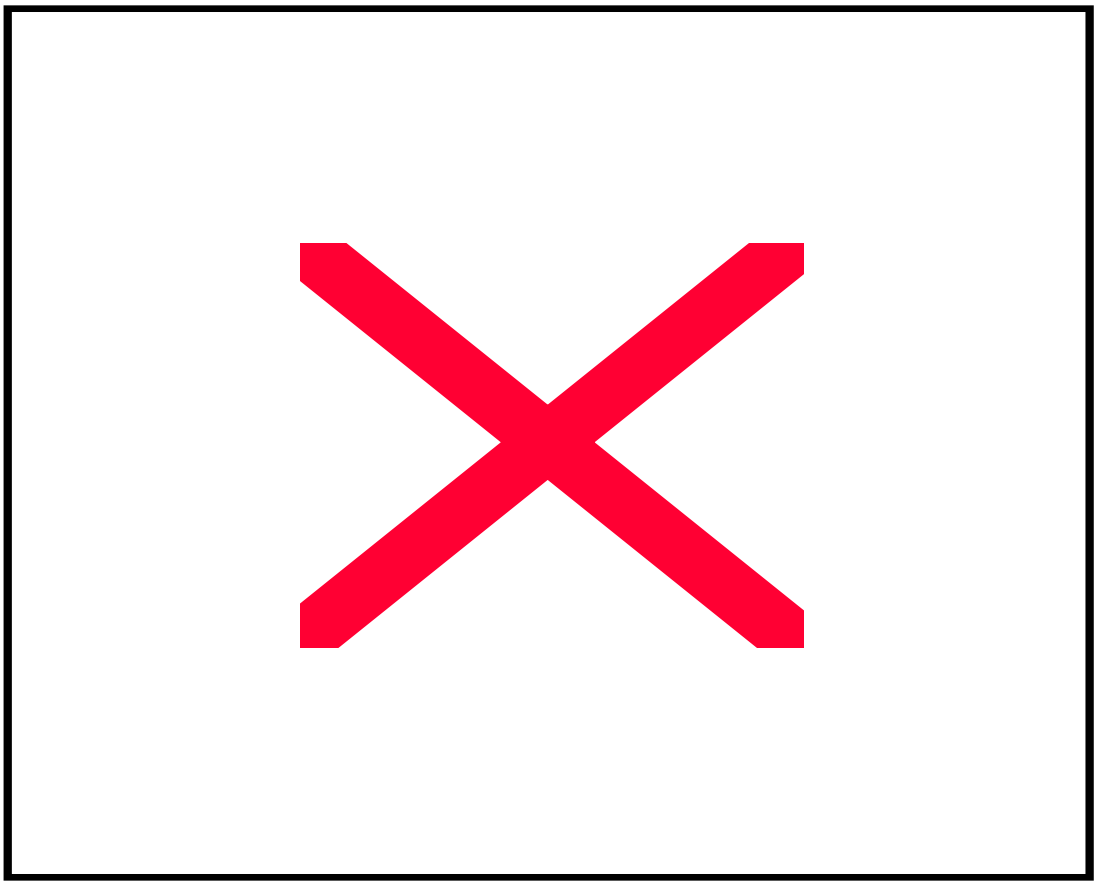
Its Governing Board (Board of Directors) has nine members as follows:

- 3 members from State Property Committee (including Mr. Batsukh, serving as the Chairman of the Governing Board)
- 4 members from the Ministry of Infrastructure
- 2 members from the Ministry of Finance and Economy

Mr. Bayarbaatar is the Executive Director of UB4, a position he has held for seven years.

The organization chart for the entire company, consisting of approximately 1,380 employees is shown in Exhibit 9.1

Exhibit 9.1 Organization Chart



The Executive Director has 5 direct reports including:

- Chief Engineer and Deputy Director
- Deputy Director in charge of Finance and Administration
- Director of Supply and Procurement
- Director of Administrative Affairs
- Project Implementation Department

The larger organizations are discussed individually in the following sub sections

Chief Engineer and Deputy Director

The Chief Engineer and Deputy Director has the primary technical and operational responsibility for the power station. Approximately 90% of all employees (1,253 people) report to the Chief Engineer.

The Chief Engineer and Deputy Director is responsible for the ongoing operation of the plant. The primary divisions, along with their staffing levels, are shown in the following table:

Division	Engineers	Technical & Other
Boiler	24	274
Fuel Handling	35	235
Turbogenerator	22	170
Electrical	27	123
Instrumentation	22	78
Chemical	11	52
Operational Management	5	4

Other departments reporting to the Chief engineer include:

- Maintenance - which is responsible for the day-to-day maintenance of the power station (major maintenance is done by outside firms). This department has 11 engineers and 109 other employees
- Engineering – providing technical expertise to other departments (18 employees)
- Technical Control – responsible for testing, measurement, labor safety, fire protection, and building inspection (9 employees)

Deputy Director – Finance and Administration

The functions of the various units and their complement of employees are as follows:

- Finance and Accounting (12)
- Sales (6)
- Planning (5)
- Internal services (17)
- Canteen (31)
- Medical (6)
- Transportation (6)

Other Units

- Supply and Procurement has 17 employees responsible for procurement of fuel, spare parts and consumable materials.
- Administrative Affairs has 13 employees
- The Project Implementation Team of 10 employees is responsible for the on-site management of the Phase 2 Rehabilitation Project

9.3.2 Perspectives on the Organization

The Role of the Governing Board

The Law of Mongolia on Corporations requires that all Mongolian members of the Governing Board be government employees representing their respective ministries that are the shareholders. In the short term prior to privatization, this kind of government control is common, particularly in the energy sector. However, several problems are encountered with this type of Governing Board, of which shareholders representing their ministries predominate. Primary to this is severe conflict of interest. Many of the entities that UB4 has significant business relationships with are also owned by the government agencies represented on the board. These include coal suppliers, fuel transportation providers, Distribution Licensees, and retail customers that are also State Owned entities. As a result, these board members have severe conflicts of interest involving quantities of fuel purchased from various mines, the price paid for fuel and transportation, offsets and preferential payment terms negotiated with various other State Owned entities, restrictions on disconnection of certain customers for non-payment, etc. This is a severe obstacle to UB4 operating as a commercial enterprise.

This type of interlocking directorships must be phased out, allowing true independent commercial operation of the restructured energy sector.

If the opportunity arises to modify the Law on Corporations it is recommended that the Executive Director of the Company should be a member of the Governing Board.

There is also a need to provide training to individual board members to educate them on corporate governance issues and effective ways to govern in a commercial environment. The Board members should realize that their role is to steer the company in the right direction, not dictate operational issues that should be left to management.

Compensation System

A critical component of a company's human resource management system is its compensation program. The Company is definitely focused in the right direction here, although there is always room for improvement. Companies in developed countries are continually modifying their compensation systems to reflect economic and competitive conditions, attract and retain qualified employees, and reward those employees for good performance.

UB4 has a compensation policy that consists of the following 5 components:

- Base salary
- Incentive Compensation or Bonus
- Experience Benefit
- Skill Benefit
- 13th Month payment

Engineers and managers have an average base salary of 90,00 to 178,000 Tg per month and workers average 32,000 to 80,000 Tg per month. There are 5 skill classifications and salaries are dependent on the classification. For information on the categories, see the detailed employee information contained in Appendix B.

There is also an incentive compensation or bonus plan in place. The "Bonus Pool" is a percent of base salary with a maximum achievable level of 80%. The Company is currently implementing a new bonus plan that is more commercially oriented to include financial as well as operational goals and targets. Each division has its own operating, technical and financial criteria. Payouts are based on overall company performance, specific department performance, and individual performance

The Experience Benefit allows employees to receive additional compensation based on years of service. This is a carry over from former times when the energy sector had difficulty retaining experienced personnel. At that time, the energy sector was not perceived to be as prestigious an area to work in as some other industries. Times have changed and now the energy sector is considered a good sector to work in.

Non-professional employees (Workers) can also receive a "Skill" component. For example, as a welder increases his proficiency in certain areas, he receives a bonus.

The 13th Month Payment component was a form of performance compensation system that was developed many years ago and was paid out at the discretion of the Governing Board.

It is recommended that the Company continue to enhance the compensation system to ensure that employees are compensated based on their contribution to the success of the organization. The Incentive Compensation or Bonus Plan is a progressive measure. The Skill Benefit is also a way to encourage non-professional employees to upgrade their skills and keep up with new technology. The Experience Benefit and 13th Month payments are

a carry over from former times and probably not producing the desired benefit in today's environment. It is recommended that those components be phased out over time.

Monthly compensation, including all 5 of the above components, has resulted in the following average salary amounts over the following time periods:

YEAR	AMOUNT
1995	44,200 Tg
1996	74,900 Tg
1997	79,900 Tg
1998	111,500 Tg
1999	127,100 Tg
2000	163,300 Tg
2001	185,600 Tg

The compound annual growth rate of salaries over the 1995 to 2001 time period was 27%. In other words, on average, employees received the equivalent of an average 27% salary increase each year. Although inflation was high in those early years, the average salaries have been increasing at a rate greater than the approximate 15% compound annual increase in consumer prices (per the "Mongolian Statistical Yearbook") over that same period. A 12% salary increase was budgeted for the year 2002. It should be noted that total salaries are under budget for the first half of 2002 since the Company financial performance has not reached planned levels.

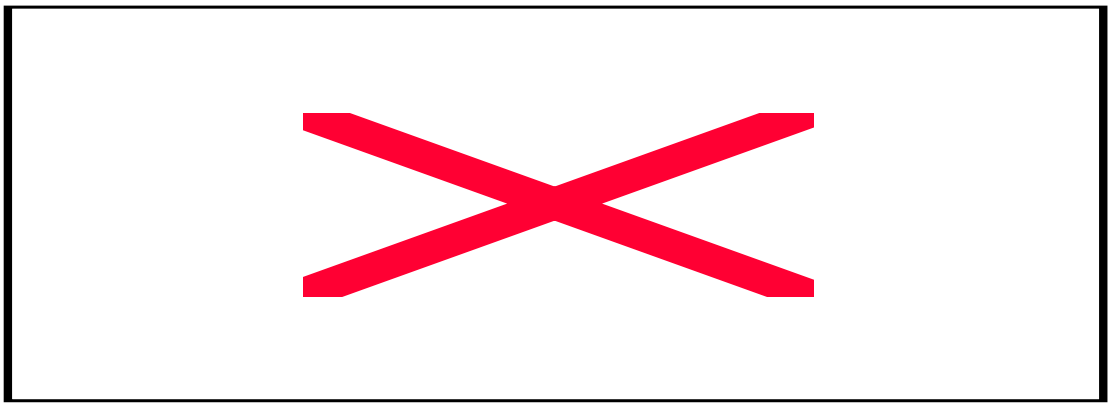
It is recommended that the Company consider external economic factors and wage levels in other industries when determining salary increases. The Company must also be concerned that the general public have a perception that cost levels in the energy sector are too high and resistance to tariff increases is increasing.

Staffing Levels

One question always surfaces when reviewing the human resource area: "Is the employee complement at the proper level?" The answer depends on a variety of issues including the extent to which employee costs contribute to the overall cost of the operation. In Chapter 3 of this report, we saw that salaries and associated costs such as Social Security and Labor Safety amount to 10% of the total costs of the Company. This is significant, but much less than fuel (52%) and depreciation (28%). Salaries, however, are a category of costs over which the Company has a significantly greater level of control than fuel, for example, and therefore the Company must exercise management control over the number of employees. It is recommended that arbitrary staff reductions NOT be made, however.

Employee levels over time are as shown in Exhibit 9.2.

Exhibit 9.2 Employee Levels



The number of employees increased in 1993 by approximately 250 due to the establishment of a new Maintenance Division at UB4. That division was spun off in 1999, resulting in a reduction of approximately 340 people. The current employee complement of approximately 1,380 is at its lowest point since 1990.

It is the author's experience that mandates such as "A 10% reduction in staff across the board" are not effective and lead to "numbers games" and the use of contract personnel that may actually increase costs. In the more commercial environment, management should focus on a reduction in total costs. If reduced staffing levels are the economic choice, then employee reductions occur as part of an overall plan in the areas determined to be most appropriate. For example, as a consequence of the refurbishment work being performed and the resulting changes in operating practices, there may be an opportunity to reduce employee levels. The Company should take such opportunities as they arise. The reductions should be accomplished to the extent possible through normal attrition (not replacing employees who retire, die or otherwise leave) and, where that does not produce the desired results, through a program that provides financial incentives for employees to leave.

There is a danger in equating employee reductions with industry restructuring. If employees feel that restructuring and commercialization is focused on reducing employment, they will resist restructuring and not focus their efforts on achieving improved results. The bottom line is that the Company can probably reduce the number of employees.

It is recommended that the Company, as part of its overall cost reduction program, take every opportunity to reduce employee levels (a factor over which management has a significant level of control) based on operating and financial criteria, as opposed to arbitrary reductions. Completion of the Phase 2 Refurbishment project may present such an opportunity. Attrition should be used as a primary tool in accomplishing reductions.

9.4 FINANCE AND ACCOUNTING

In a commercial environment, the role of the Finance and Accounting area changes significantly. As opposed to recording and reporting information for a government ministry, the focus changes to informing the management team, the Governing Board, and other stakeholders of the position of the company. In the case of UB4, one of the significant stakeholders is the Energy Regulatory Authority. In the future, the company will also be concerned with potential investors, who require significant amounts of detailed information and disclosure.

In Chapter 3, there was significant discussion of Financial Accounting, aimed at an external audience. Recommendations were made concerning the movement closer to full compliance with International Accounting Standards (IAS). This is important as the company moves closer a commercial environment and in the future as outsiders, especially strategic investors, take a closer look at the Company. The reader should refer to Chapter 3 for more information on Financial Accounting

Equally important, however, is the area of Management Accounting, which is focused on accumulating and reporting information in a manner that helps first line managers to monitor and control the costs of their individual operations. This is the area that the Finance and Accounting personnel must focus on for overall cost control. It is recommended that the accountants improve their skills and computer systems in this area so they can monitor and report progress on the Key Performance Measures discussed in Chapter 4.

9.5 PROCUREMENT

Similar to the other processes discussed, procurement will be influenced to a great extent by the move to a more commercial environment. Since fuel represents 52% of overall costs, the procurement process is extremely important. Given that fuel prices and terms are determined by the Ministry of Infrastructure, this task is a difficult one for UB4 personnel. It is recommended that the ministry allow the company, and other generators, to have more influence over the process. Although the Ministry is delegated the power to establish fuel prices by the Energy Law, it should allow the generators to work with the coal mines to develop quality guidelines for fuel that relate to the price paid. In other words, if the average quality (ash and moisture content and heating value) of a given shipment deviates from a given standard, the price should be adjusted accordingly.

It is also recommended that the Ministry discontinue the practice of dictating that power stations buy amounts of coal in excess of the quantity it needs to maintain a reasonable inventory. Additionally, power stations should not be required to buy from mines that do not produce the type or quality of coal they need. The industry cannot be expected to operate in a commercial manner if a government ministry does not allow it to effectively procure its primary input.

Coal procurement should be determined by the generator, given prudent inventory management and cost considerations. If, in fact, a coal mine can save money by shipping coal to a power station in advance of its needs, then the price and or payment terms should reflect that.

The other significant procurement area is spare parts and consumable materials. UB4 has a staff responsible for this; however, there is duplication due to a decree from the Minister of Infrastructure that the energy sector entities procure certain spare parts and consumables through the Energy Authority (EA). In the case of mazut, an imported commodity with a price fluctuating based on the world market price of oil; such a directive

may be necessary. Also, to the extent that significant volume discounts are available, centralized procurement may be justified. However, that does not occur with many spare parts and consumable materials. Discussion with the Procurement staff of UB4 and other licensees indicates that they feel that they can procure many items at a lower cost by purchasing direct rather than relying on the EA. In addition, they save the service fee charged by the EA.

It is recommended that the Ministry of Infrastructure revise the decree requiring licensees to procure materials through the EA. The licensees should be given the option of procuring the items themselves. Of course, if the licensee feels that it receives a lower price by having EA do the procurement, then it may do so.

9.6 SUMMARY OF RECOMMENDATIONS

Following is a summary of recommendations made in Chapter 9:

- UB4 should continue to monitor monthly actual results against the original plan for the year. In addition to the numerical data, prepare a report explaining the reasons for significant variances.

- As conditions change throughout the year, the department, in consultation with the operating departments, should develop what is sometimes referred to as a "Current Outlook" that reflects the actual results to date and the plan for the remainder of the year, adjusted for known or anticipated changes such as tariff adjustments, fuel cost changes, sales and output changes, etc. This will give the management team a more realistic picture of the near future that it can use to adjust operations and financial parameters.

- In addition to the income statement and detailed cost elements, the company should also develop a Cash Forecast or plan in order to better plan for short-term borrowings and overall working capital management.

- If the opportunity arises to modify the Law on Corporations it is recommended that the Executive Director of the Company should be a member of the Governing Board.

- The Company should continue to enhance the compensation system to ensure that employees are compensated based on their contribution to the success of the organization. The Incentive Compensation or Bonus Plan is a progressive measure. The Skill Benefit is also a way to encourage non-professional employees to upgrade their skills and keep up with new technology. The Experience Benefit and 13th Month payments are a carry over from former times and probably not producing the desired benefit in today's environment. It is recommended that those components be phased out over time.

- The Company should consider external economic factors and wage levels in other industries when determining salary increases. The Company must also be concerned that the general public have a perception that cost levels in the energy sector are too high and resistance to tariff increases is increasing.

- As part of its overall cost reduction program, UB4 should take every opportunity to reduce employee levels (a factor over which management has a significant level of control) based on operating and financial criteria, as opposed to arbitrary

reductions. Completion of the Phase 2 Refurbishment project may present such an opportunity. Attrition should be used as a primary tool in accomplishing reductions.

- The Ministry of Infrastructure should allow the company, and other generators, to have more influence over the fuel procurement process. The Ministry should discontinue the practice of dictating that power stations buy amounts of coal in excess of the quantity needed to maintain a reasonable inventory. Additionally, power stations should not be required to buy from mines that do not produce the type or quality of coal they need. The industry cannot be expected to operate in a commercial manner if a government ministry does not allow it to effectively procure its primary input.

- The Ministry of Infrastructure should revise the decree requiring licensees to procure materials through the EA. The licensees should be given the option of procuring the items themselves. Of course, if the licensee feels that it receives a lower price by having EA do the procurement, then it may do so.

10. RECOMMENDATIONS AND ACTION PLANS

10.1 RECOMMENDATIONS FOR COMPANY ACTION

The recommendations made in this report fall into two categories. This section deals with the recommendations to the management team of UB4 that it has the ability and authority to take on its own initiative within current laws and regulations. Section 10.2 deals with Sector Recommendations.

A table has been developed for each recommendation and includes:

- The Recommendation
- Background on the issues to give the reader a framework to understand the situation
- Preconditions that are necessary in order to carry our the recommendation
- A Summary Action Plan that includes the primary tasks, the person or group responsible for the task, and a proposed time frame. These are not detailed action plans, but rather a summary road map that the Company can use to develop the individual assignments in order to achieve progress on the recommendations.
- The Results Expected as a result of implementing the recommendation.

As a practical matter, not all recommendations can be implemented in a short period of time. However, progress will only be made if the Company begins implementation of the commercialization recommendations: one step at a time. UB4 must begin to manage it's own future.

The reader is encouraged to read the entire report for a more in depth discussion of the situation and the reasons for each of the recommendations made.

Company Recommendation A

Continue to improve accounting and reporting and move toward IAS compliance over the next few years

Background of the Issue

Although the accounting procedures somewhat conform to International Accounting Standards (IAS), they cannot be considered to be in strict compliance with IAS. The Company actually has a reasonable, workable accounting system as compared with energy entities in many developing countries, showing that it has made significant progress. Strategic investors place a high importance on financial statements that are in compliance with IAS. Limitations to the financial statements include:

- There is no disclosure to enable the reader to obtain a good understanding of the statements. The reader does not know, for example, the basic accounting principles used to produce the statements or the reasons for major deviations in balances. Adequate disclosure is a critical element of IAS compliance.
- No bad debt expense is recorded, resulting in an overstatement of Accounts Receivable and overstated net income.
- Maintenance costs are recorded as capital expenditures in the fixed asset accounts as opposed to being charged as a current period expense
- Loan Liabilities are not recorded until the projects are completed, resulting in an understatement of Construction Work in Progress and an understatement of Long-Term Debt.

Full compliance with IAS is costly, therefore, a phase-in approach is recommended. A full IAS audit is not recommended in the near term.

Preconditions

It is assumed that the accounting specialists are trained in IAS as a result of the ADB project, therefore no preconditions exist.

Summary Action Plan

Task	Responsibility	Time Frame
1. Develop footnote disclosures for issuance with the Annual financial statements and publish them with the 2002 financial statements. Include footnotes for: • Accounting Principles used • Estimated provision for bad debt expense (not recorded) • Loan Liability and Construction Work in Progress for Phase 2	Finance and Accounting Department	January 2003
2. Petition the ERA to include a provision for bad debt in the tariffs. If such petition is approved by ERA, then record bad debt expense and uncollectable provision in the financial statements. (See Sector Recommendation E)	Finance and Accounting Department	Mid 2003, the time frame assumed for the next tariff filing

3. Record preventive and periodic maintenance as a current period expense in the financial statements	Finance and Accounting Department	Effective 01 January 2003
4. Record loan liability and construction work in progress for Phase 2 Refurbishment project	Finance and Accounting Department	Effective 01 January 2003
Results Expected 1. More transparency of the financial position of UB4 2. More credibility with potential investors 3. A clearer financial picture should make it easier to explain to ERA and other outside parties the need for tariff adjustments		

Company Recommendation B

Engineers and finance specialists should perform a financial analysis on future projects prior to presenting them to management for approval.

Background of the Issue

In the new industry environment, the company must adopt a more commercial or business orientation. In prior years, most decisions, including investment decisions, were made externally by Ministry of Infrastructure personnel. In the future, the company will be responsible for managing its operations and investments in an economic manner.

Training in financial analysis was provided to the UB4 management team and engineering and finance specialists.

Preconditions

Phase 2 of the rehabilitation project presents a very significant opportunity to perform financial analyses on many of the components of the project. However, if the Company has no control or influence over procurement decisions or the scope of work on the project, then the recommendation would be applied to minor replacement projects only.

Summary Action Plan

Task	Responsibility	Time Frame
1. Establish a "Financial Analysis Team" with members from the following departments: • Project Implementation Unit • Finance and Accounting • Engineering • Planning	Executive Director	15 December 2002
2. Issue a Decree that requires a financial analysis to be performed on all proposed investments (over a certain amount, say 10 million Tg) prior to presenting the project to management for approval.	Executive Director	15 December 2002
3. Review the individual work packages of the Phase 2 project and determine if the expected benefits from the expenditures yield a positive Net Present Value. In the event of alternative options, select the most financially viable alternative	Financial Analysis Team	15 December 2002 - 28 February 2003
4. Perform a financial analysis on all future investment projects	Finance and Accounting Department	Ongoing

Results Expected

1. Most effective use of Phase 2 loan proceeds.
2. Effective use of investment funds in the future
3. Ability to demonstrate to the ERA and other outside parties that capital expenditures are being made in an effective manner

Company Recommendation C

Create the position of MIS Manager and give that person overall responsibility for planning and management of the organizations IT and MIS systems

Background of the Issue

The Chief Accountant is responsible for financial systems and the Manager Engineering is responsible for supervision of IT technical staff. Ideally there should be a manager for the overall IT systems of the organization who would take responsibility for development, implementation and maintenance of all the systems.

Preconditions

The concurrence of the Executive Director that the position is needed.

Summary Action Plan

Task	Responsibility	Time Frame
1. Review the Job description provided in Appendix D-3 and make any changes needed	Executive Director and Human Resources	15 December 2002
2. Approve the Job description and begin the search process for the position of MIS Manager	Executive Director and Human Resources	15 January 2003
3. Complete the selection process and hire the successful candidate	Human Resources	01 March
4. Notify the Company of the role of the MIS Manager	Executive Director	15 March 2003
5. Assemble a team of specialists to carry out the duties of the MIS Manager	MIS Manager	15 April 2003

Results Expected

1. Development of a manager who has a clear view of the present and future use of IT and MIS systems at UB4
2. More efficient use of technology
3. A central source for Company employees to go to for assistance with technology
4. More coordination and standardization of technology
5. Improved staff training in using IT technology

Company Recommendation D

Develop a plan and budget to upgrade computer systems, extend the Local Area Network in the office and the plant and manage hardware and software maintenance.

Background of the Issue

Much of the present computer equipment was installed in 1998/9 and is now lacking in capacity and not capable of being used effectively on the LAN or upgraded to later versions of software.

IT equipment should be depreciated over a 4 year life and use that depreciation to fund the purchase of replacement equipment and software upgrades.

Whilst a LAN has been installed it is not being extensively used to transfer data electronically throughout the organization and replace paper reports and data re-entry.

Preconditions

Limited funds are available in the short-term; therefore, plans will have to be made with this limitation in mind.

Summary Action Plan

Task	Responsibility	Time Frame
1. Create an asset list of all equipment including date of purchase, capacity, software and level	IT Manager	March 2003
2. Liaise with the National Dispatch Center to understand the capabilities of their proposed Wide Area Network	IT Manager	March 2003
3. Agree on the standards that UB 4 will follow for all application and system software in the future so that all staff can use common products and that all computers can communicate with each other.	IT Manager	March 2003
4. Identify the equipment that can meet the future needs and that which cannot and develop a replacement and enhancement program.	IT Manager & Executive Director	April 2003

Results Expected

1. IT equipment and software being used will be compatible
2. Easier in the future to train staff to use common systems
3. IT equipment will be kept up to date in the future
4. Better use will be made of the LAN to speed communication, reduce manual effort and save data re-keying

Company Recommendation E

Follow the short-term plan developed to enhance and extend some sections of the IT and network infrastructure including equipment that can be financed from the current UB4 budget. Also develop a four-year plan.

Background of the Issue

A short-term plan has been developed to enhance the LAN from the current budget. This should be encouraged to proceed taking into account the longer term initiatives in Recommendation D

Preconditions

Will need someone to lead this initiative and hand over to MIS Manager when appointed.

Summary Action Plan

Task	Responsibility	Time Frame
1. Define plan and prepare budget	Finance/Engineering	June 2003
2. Obtain agreement to plan and expenditure	Finance/Engineering	Sept 2003
3. Implement plan	Finance/Engineering	Jan 2004

Results Expected

1. Improved usage of LAN
2. Progress towards improved IT environment

Company Recommendation F

Continually monitor and report on the Key Performance Indicators.

Background of the Issue

The consultants have worked with the executive team to identify a series of Key Performance Indicators and reports that could be used by management to effectively manage the business. These indicators include existing reports and new information identified by the working party and are included in Exhibit 4.1 of this report. Also identified is the department responsible for producing the information, the department managers that should see the information and the frequency that it should be produced.

NOTE: This Recommendation is Related to Recommendation I, The issuance of the Executive Order.

Preconditions

The financial systems need to be upgraded to enable better integration of data as well as a better reporting system for producing financial reports promptly at the end of each month.

Summary Action Plan

Task	Responsibility	Time Frame
1. Issue the Executive order to begin the process of producing and distributing the KPIs	Executive Director	Completed
2. Utilizing current systems and procedures, report on those KPIs that are available	Finance Manager	January 2003
3. Upgrade the financial systems	Finance & MIS Manager	April 2003
4. Improve the reporting capability of the information systems	Finance & MIS Manager	April 2003
5. Refine reporting information in accordance with the organizations needs	Management team	On going

Results Expected

1. Better informed management will lead to better decisions being made
2. Management information disseminated to a lower level of management to enable them to do their job better
3. Continually improved operational and financial performance from UB4 through management having better more up to date information

Company Recommendation G

Provide training to management on the facilities available in the local area network and encourage them to make use of this tool to speed communication within the organization

Background of the Issue

Although a LAN has been installed to link 32 computers, information is not transferred electronically but by diskette or paper record.

The Staff is not making use of the LAN and more training needs to be given to encourage its use by management.

Preconditions

Senior management usually has a reluctance to embrace IT technology.

Summary Action Plan

Task	Responsibility	Time Frame
1. Develop simple training material to get people confident of sending messages to each other and transferring data using the network	MIS Manager	April, 2003
2. Start by working with logically connected parts of the organization and after giving training to those executives identify data that could be sent electronically instead of by paper.	MIS Manager & HR	May, 2003
3. Send out broadcast information from the Executive Director electronically on a regular basis	Executive Director	May, 2003
4. Progressively replace paper reports with electronic versions using the LAN.	MIS Manager & dept Mgs	On going

Results Expected

1. Increased use of electronic mail to speed communication throughout the organization.
2. Reduction in paper reports being replaced by electronic data
3. Increasing level of computer awareness amongst management & staff

Company Recommendation H

IT activities such as security, virus control, and back-up need to be reviewed and strengthened.

Background of the Issue

IT systems need to be properly managed to prevent loss of valuable information or a virus attack incapacitating the system.

Preconditions

Up to date virus protection software such as Norton Utilities needs to be purchased and installed.

Important electronic data needs to be copied and stored in a secure manner so that it can be used if current data is lost for whatever reason

Summary Action Plan

Task	Responsibility	Time Frame
1. Develop a computer security plan that includes data back up, virus protection and access security	MIS Manager	April, 2003
2. Purchase and install virus protection software such as “Norton Utilities”	MIS Manager	May, 2003
3. Identify important data that needs to be stored to enable recovery in the event of a failure	MIS Manager	May, 2003
4. Purchase a tape or disk unit for data backup	MIS Manager	May, 2003
5. Commence a process of daily, weekly and monthly data storage and keep the stored data at an independent location from the original data.	MIS Manager	June, 2003
6. Commence a process of access security that gives staff access to files and data that they need to do their work but not to access confidential data.	MIS Manager & Departmental Managers	June, 2003

Results Expected

1. Safe and secure IT environment
2. UB 4 would be able to recover from a disaster such as fire, flood or virus attack.

Company Recommendation I

Issue the Executive Order to produce the recommended MIS Reports

Background of the Issue

The consultants have worked with the executive team to identify a series of Key Performance Indicators and reports that could be used by management to effectively manage the business. These indicators include existing reports and new information identified by the working party and are included in Exhibit 4.1 of this report. Also identified is the department responsible for producing the information, the department managers that should see the information and the frequency that it should be produced.

NOTE: This Recommendation is Related to Recommendation F, The monitoring and reporting of Key Performance Indicators.

Preconditions

The financial systems need to be upgraded to enable better integration of data as well as a better reporting system for producing financial reports promptly at the end of each month.

Summary Action Plan

Task	Responsibility	Time Frame
1. Issue the Executive order to begin the process of producing and distributing the KPIs	Executive Director	Completed

Results Expected

1. Better informed management will lead to better decisions being made
2. Management information disseminated to a lower level of management to enable them to do their job better
3. Continually improved operational and financial performance from UB4 through management having better more up to date information

Company Recommendation J

The Management team must take advantage of the Phase 2 loan proceeds in the most optimal manner from an operational and financial perspective to realize improvements on the Key Performance Measures

Background of the Issue

Phase 1 of the Rehabilitation project concentrated primarily on boilers 1-4. Phase 2 is concentrating on boilers 5-8 as well as some other work. Upon completion of Phase 2, the power station will no longer be boiler limited, therefore, improving the availability of the Power Station. In addition, both the fuel rate and the station use should improve, resulting in more efficient and economic operation.

NOTE: This recommendation is related to Company Recommendation B, the financial analysis of future investment projects.

Preconditions

The UB4 management team must have the authority to influence the scope of work and make procurement decisions. If the Ministry of Infrastructure does not allow the Power Station to make these decisions, then the UB4 management will not be able to implement this decision.

Summary Action Plan

Task	Responsibility	Time Frame
1. Establish a "Financial Analysis Team" with members from the following departments: • Project Implementation Unit • Finance and Accounting • Engineering • Planning	Executive Director	15 December 2002
2. Issue a Decree that requires a financial analysis to be performed on all proposed investments (over a certain amount, say 10 million Tg) prior to presenting the project to management for approval.	Executive Director	15 December 2002
3. Review the individual work packages of the Phase 2 project and determine if the scope of the work will produce the expected benefits in terms of improvement in availability, fuel rates, station use, etc.	Financial Analysis Team	15 December 2002 - 28 February 2003
4. Review the individual work packages of the Phase 2 project and determine if the expected benefits from the expenditures yield a positive Net Present Value. In the event of alternative options, select the most financially viable alternative	Financial Analysis Team	15 December 2002 - 28 February 2003

Results Expected

1. Improved availability of the power station
2. Improved fuel rates
3. Reduction in station use

Company Recommendation K

Once the rehabilitation work is completed, sufficient resources must be devoted to periodic maintenance to prevent a recurrence of the situation in the mid 1990s

Background of the Issue

UB4 Power Station deteriorated in the 1990s due partially to lack of funds for proper maintenance. The Phase 1 Refurbishment project included significant work on Boilers 1-4, along with other equipment. The Phase 2 work includes refurbishment of Boilers 5-8. The Company must devote sufficient resources to properly maintain the equipment to prevent deterioration and to enable the power station to operate in an optimal manner.

Preconditions

Funds for maintenance must come from customer tariffs; therefore, ERA must be willing to increase tariffs.

Summary Action Plan

Task	Responsibility	Time Frame
1. For Boilers 1-4, develop a maintenance plan and associated budget	UB4 Deputy Directors	01 December 2002
2. Implement the plan, to the extent of availability of funds.	UB4 Deputy Directors	During 2003
3. The next tariff application should include the maintenance plan and associated cost projections	Finance and Accounting Department	In 2003, when a tariff application is filed
4. Repeat the process for Boilers 5-8 as Phase 2 of the refurbishment project is completed	UB4 Deputy Directors	2004

Results Expected

1. Improved availability and performance of the power station
2. Improved cost recovery

Company Recommendation L

Become more proactive in the regulatory process. For example, develop and propose Incentive Mechanisms to ERA

Background of the Issue

UB4 should not wait to have the ERA impose regulatory requirements upon it. The Company should be proactive and propose various improvements in regulatory procedures to the ERA. Rate of Return (or Cost Plus) Regulation does not necessarily provide a licensee with incentives to reduce costs, improve service levels, or to implement new, innovative programs. Performance Based (or Incentive) Regulation aims to overcome this deficiency. If a pre determined performance measure has been met or exceeded, the Licensee is rewarded in the form of higher "Profits". If targets are not met, the Licensee is penalized, generally in financial terms (lower "Profits)

In the case of UB4, possible incentive targets could include items such as:

- Improvement in Power Station Availability
- Reduction of the Fuel Rates
- Reduction of Station Use

The mechanisms should be developed by determining a reasonable base level for a particular measure (say fuel rates) using historical data and recent demonstrated levels. If the actual performance over a period of time (say one year) were better by at least a given amount, then the tariff would be increased to provide UB4 with additional income. If the power station does not achieve the base level, then it would be penalized.

Also See Sector Recommendation C

Preconditions

ERA agrees that Performance Based Regulation is more effective than the current system.

Summary Action Plan

Task	Responsibility	Time Frame
1. UB4 submits a proposal to ERA	Chief Engineer and Finance & Accounting Department	15 August 2003
2. ERA conducts open hearings on the Licensee's proposals	ERA	15 September 2003
3. ERA issues an order specifying the incentive mechanism and the targets for each Licensee for the year 2004	ERA	01 November 2003
4. Licensees report on their individual progress in meeting the targets	Licensees	Quarterly

Results Expected

1. More effective form of regulation
2. Encourage innovation on the part of the Company
3. Lower cost of electricity
4. UB4 has the opportunity to be rewarded for their good results

Company Recommendation M

Perform a detailed analysis of the incremental cost to cycle the boilers on short notice to follow the load and present that analysis to the ERA in order that an Ancillary Services tariff component can be developed and applied

Background of the Issue

The current tariff does not recognize the fact that UB4 is used for load following throughout the day. In order to follow the load, UB4 must cycle its boilers up and down which requires the power station to utilize more mazut than in steady state operation. It is recommended that the company perform a detailed analysis of the incremental cost to cycle its boilers on short notice to follow the load and present that analysis to the ERA in order that an Ancillary Services tariff component can be developed and applied in the future.

Also See Sector Recommendation D

Preconditions

The ERA must agree to allow UB4 to recover costs incurred as a result of following the instructions of the Dispatch Licensee.

Summary Action Plan

Task	Responsibility	Time Frame
1. UB4 performs tests on those boilers (and boiler turbine combinations) used for load following to determine the incremental cost of load following.	Chief Engineer	15 December 2002 – 15 March 2003
2. UB4 submits the details of the tests along with a tariff proposal to compensate it for load following.	Chief Engineer and Finance & Accounting	15 April 2003
3. ERA reviews the proposal and conducts open hearings on the issue	ERA	15 May 2003
4. Tariff Order issued to incorporate the Ancillary Service tariff for UB4	ERA	01 July 2003

Results Expected

1. Cost Recovery for UB4 for the additional cost incurred to follow the orders of the Dispatch Licensee.

Company Recommendation N

Devote sufficient time and resources to the tariff process in order to present its position in a detailed, transparent, understandable manner to have a successful outcome

Background of the Issue

The tariff process is a new experience for all Licensees, including UB4. In the newly restructured environment, it is a very critical process that determines, to a large extent, the profitability of the company. The regulatory process of establishing tariffs begins with the Licensee performing a detailed analysis of its operations and costs, using that information to develop a tariff proposal, and presenting the proposal to the regulator with sufficient supporting detail. The "Burden of Proof" in a tariff process is the responsibility of the Licensee. It is the regulator's job to review the proposal for reasonableness, make any necessary adjustments in a reasonable and transparent manner, and set the resulting tariffs.

It is recommended that UB4 devote sufficient time and resources to the tariff process in order to present its position in a detailed, transparent, understandable manner in order to have a successful outcome. The tariff proposal should include documentation of the initiatives that the company is undertaking to improve operations and reduce costs. This will provide the ERA with valuable information to convey to customers, the Government of Mongolia, and the general public as to the level of tariffs and any proposed changes.

Preconditions

None

Summary Action Plan

Task	Responsibility	Time Frame
1. Appoint a senior level Specialist from either the Finance & Accounting or Planning Department to be responsible for all tariff matters	Executive Director	01 January 2003
2. Issue a decree authorizing the Specialist to utilize personnel from various departments to prepare tariff applications and provide other information to the ERA	Executive Director	15 January 2003
3. The Specialist should deal with ERA personnel to determine the type of information needed to support tariff applications and work with Company personnel to document costs and justify projections to be used.	Specialist	Ongoing
4. When a tariff application is going to be filed, the Specialist and other designated personnel should be devoted on a full time basis to prepare a detailed tariff proposal	Specialist and Designated Personnel	Sometime in 2003

Results Expected

1. More reasonable tariffs for UB4
2. Higher profitability

Company Recommendation O

Continue to enhance the compensation system to ensure that employees are compensated based on their contribution to the success of the organization. The Incentive Compensation or Bonus Plan is a progressive measure. Phase out the Experience Benefit and the 13th Month payments.

Background of the Issue

A critical component of a company's human resource management system is its compensation program. The Company is focused in the right direction here, although there is always room for improvement. Compensation systems must reflect economic and competitive conditions, help to attract and retain qualified employees, and reward those employees for good performance.

UB4 has a compensation policy that consists of the following 5 components:

- Base salary
- Incentive Compensation or Bonus
- Experience Benefit
- Skill Benefit
- 13th Month payment

The Experience Benefit allows employees to receive additional compensation based on years of service. This is a carry over from former times when the energy sector had difficulty retaining experienced personnel. At that time, the energy sector was not perceived to be as prestigious an area to work in as some other industries. Times have changed and now the energy sector is considered a good sector to work in.

The 13th Month Payment component was a form of performance compensation system that was developed many years ago and was paid out at the discretion of the Governing Board.

Preconditions

The Management team must communicate to employees that a gradual change in the compensation plan is being made and that the intent is to have a compensation system that rewards employees for their performance and that the intent of the change is NOT to reduce salaries.

Summary Action Plan

Task	Responsibility	Time Frame
1. Inform employees that changes are being made to the compensation system and that the Experience Benefit and 13th Month payment components will be phased out over a five year period	Executive Director	January 2003
2. Phase out 20% of the 2002 Experience Benefit and 13th Month payment components each year. The money saved should be added to the Incentive Compensation Plan	Executive Director	December 2003 - December 2007

Results Expected

1. Align compensation with performance
2. Eliminate compensation components that are no longer necessary

Company Recommendation P

Consider external economic factors, the financial situation of the Company, and wage levels in other industries when determining salary increases.

Background of the Issue

The compound annual growth rate of salaries over the 1995 to 2001 time period was 27%. In other words, on average, employees received the equivalent of an average 27% salary increase each year. Although inflation was high in those early years, the average salaries have been increasing at a rate greater than the approximate 15% compound annual increase in consumer prices (per the "Mongolian Statistical Yearbook") over that same period. A 12% salary increase was budgeted for the year 2002.

It is recommended that the Company consider external economic factors and wage levels in other industries when determining salary increases. The Company must also be concerned that the general public have a perception that cost levels in the energy sector are too high and resistance to tariff increases is increasing.

Preconditions

Willingness on the part of the management team to control total salary cost, one of the few cost elements over which it has a significant amount of control.

Summary Action Plan

Task	Responsibility	Time Frame
1. Compile data on the compensation of employees working in other companies in the Energy Sector and other industries in Mongolia, by skill level if possible. Current compensation levels and annual increases over the previous 5 years would be helpful. Human Resource Specialists March 2003 – June 2003 6.	Executive Director and Human Resources	15 December 2002
7. Approve the Job description and begin the search process for the position of MIS Manager	Executive Director and Human Resources	15 January 2003
8. Complete the selection process and hire the successful candidate	Human Resources	01 March
9. Notify the Company of the role of the MIS Manager	Executive Director	15 March 2003
10. Assemble a team of specialists to carry out the duties of the MIS Manager	MIS Manager	15 April 2003

duties of the MIS Manager		

Results Expected

5. Development of a manager who has a clear view of the present and future use of IT and MIS systems at UB4
6. More efficient use of technology
7. A central source for Company employees to go to for assistance with technology
8. More coordination and standardization of technology

5. Improved staff training in using IT technology

Company Recommendation P

Consider external economic factors, the financial situation of the Company, and wage levels in other industries when determining salary increases.

Background of the Issue

The compound annual growth rate of salaries over the 1995 to 2001 time period was 27%. In other words, on average, employees received the equivalent of an average 27% salary increase each year. Although inflation was high in those early years, the average salaries have been increasing at a rate greater than the approximate 15% compound annual increase in consumer prices (per the "Mongolian Statistical Yearbook") over that same period. A 12% salary increase was budgeted for the year 2002.

It is recommended that the Company consider external economic factors and wage levels in other industries when determining salary increases. The Company must also be concerned that the general public have a perception that cost levels in the energy sector are too high and resistance to tariff increases is increasing.

Preconditions

Willingness on the part of the management team to control total salary cost, one of the few cost elements over which it has a significant amount of control.

Summary Action Plan

Task

Responsibility

Time Frame

2. Compile data on the compensation of employees working in other companies in the Energy Sector and other industries in Mongolia, by skill level if possible. Current

Company Recommendation P

Consider external economic factors, the financial situation of the Company, and wage levels in other industries when determining salary increases.

compensation levels and annual increases over the previous 5 years would be helpful.

Human Resource Specialists

March 2003 – June 2003

3. Prepare a detailed report comparing UB4 with other Energy Sector companies and other industries, by skill level. Send the report to the Executive Director.

Human Resource Specialists

August 2003

4. Consider the comparative information when establishing compensation levels. The information can also be used to justify salary amounts in a tariff application.

Executive Director and Management Team

Ongoing

Results Expected

1. Better alignment of UB4 compensation with other Energy Sector companies.
2. Better alignment of UB4 compensation with comparable skill levels in other industries.
3. Documentation of the comparative information for use in tariff applications and other dealings with outside entities.

Company Recommendation Q

Take every opportunity to reduce employee levels (a factor over which management has a significant level of control) based on operating and financial criteria. Attrition should be used as a primary tool.

Background of the Issue

The Chief Accountant is responsible for financial systems and the Manager Engineering is responsible for supervision of IT technical staff. Ideally there should be a manager for the overall IT systems of the organization who would take responsibility for development, implementation and maintenance of all the systems.

Preconditions

The concurrence of the Executive Director that the position is needed.

Summary Action Plan

Task	Responsibility	Time Frame
11. Review the Job description provided in Appendix D-3 and make any changes needed	Executive Director and Human Resources	15 December 2002
12. Approve the Job description and begin the search process for the position of MIS Manager	Executive Director and Human Resources	15 January 2003
13. Complete the selection process and hire the successful candidate	Human Resources	March
3. For those areas that cannot reduce through attrition, develop a staff reduction plan to accomplish the reductions. The plan would include financial incentives to encourage employees to leave and, where that does not accomplish the reduction, a performance based layoff policy.	Human Resources	March 2005
4. On an annual basis, review the staffing levels of each Department and reduce staffing where necessary. Have each department document their need for the current number of employees.	Executive Director and Management Team	Ongoing, beginning in 2005

Results Expected

1. Lower Costs
2. Documentation of staffing levels for use in tariff applications and dealings with other outside entities.

10.2 SECTOR RECOMMENDATIONS

UB4 operates within the context of the overall power sector in accordance with the laws of Mongolia and the policies of the Government, its Ministries, and the Energy Regulatory Authority. This results in obstacles to commercialization as a result of those constraints.

This section provides details of the primary recommendations made which the Company does not have the authority to implement on its own. It includes changes that the Government of Mongolia, its Ministries, and the Energy Regulatory Authority are encouraged to implement in order that the Company (and other Companies in the sector) has the opportunity to operate on a commercial basis.

A table has been developed for each recommendation and includes:

- The Recommendation
- Background on the issues to give the reader a framework to understand the situation
- Preconditions that are necessary in order to carry out the recommendation
- A Summary Action Plan that includes the primary tasks, the person or group responsible for the task, and a proposed time frame. These are not detailed action plans, but rather a summary road map that can be used to develop the individual assignments in order to achieve progress on the recommendations.
- The Results Expected as a result of implementing the recommendation.

Again, the reader is encouraged to review the entire report for a more in depth discussion of the issues.

Sector Recommendation A

The Government of Mongolia should assume the exchange rate risk associated with international loans.

Background of the Issue

The Government of Mongolia (GOM) negotiated loans with the Government of Japan that are denominated in Yen. The GOM then negotiated an "On lending" agreement with UB4, also specifying repayment of principle and interest in Yen. There is significant exchange rate risk associated with these loans since they extend over long periods of time. A prudent commercial entity exposed to such risk would hedge that risk with an appropriate financial arrangement, or series of arrangements, involving a cost to the entity. UB4 is a rather small entity and does not have the expertise or financial resources to effectively hedge that risk.

It is, therefore, recommended that the GOM assume the exchange rate risk associated with this and other international loans. It is the only entity in Mongolia that (through the Ministry of Finance and Economy or the Bank of Mongolia) has the expertise and resources to either hedge the risk, or bear the potential loss if the Togrog depreciates relative to the other currencies.

Preconditions

The Government of Mongolia must be in agreement with the concept that it is unrealistic to have UB4 assume the exchange rate risk.

Summary Action Plan

Task

Responsibility

Time Frame

1. A letter is submitted to the Minister of Finance and Economy to request that the On-Lending Agreement for the Phase 1 loan be rewritten with payment due in Mongolian Togrog (calculated using the exchange rate as of 31 December 2002)

UB4 Governing Board

01 December 2002

2. Revised On Lending agreement is issued for the Phase 1 loan

Ministry of Finance and Economy

15 January 2003

Sector Recommendation A The Government of Mongolia should assume the exchange rate risk associated with international loans.
3. Phase 2 loan On Lending agreement issued specifying repayment from UB4 to the GOM in Tg (using the exchange rate of the day prior to issuance of the On Lending agreement) Ministry of Finance and Economy Upon completion of the project (2004)
Results Expected 1. Less risky environment for UB4 to operate in 2. Increased likelihood of UB4 being able to meet its debt service obligations

Sector Recommendation B

The Government of Mongolia should Implement the September 2001, recommendation given to it to resolve the major debt issues of the Licensees relating to inherited customer accounts receivable, debt to coal suppliers, and the debt from the distribution licensees to the generators.

Background of the Issue

At the time of Corporatization in 2001, UB4 had significant amounts due from the distribution entities for power delivered but not paid for in prior periods. In addition, UB4 owed significant amounts to coal mines for fuel received but not paid for. Other generation entities were in similar positions. Distribution entities owed generators for power they received in prior periods but were unable to pay since retail customers had not paid for power they received in prior periods. This situation is common in many developing countries and is often referred to as the "Cycle of Debt".

In September 2001, a recommendation including a variety of alternatives was given to the Government of Mongolia (See appendices A-11 and A-12). The recommendation was based on the distribution entities first writing off their "Hopeless" accounts receivable and taking vigorous action against those customers that had the ability to pay. It also was recommended that the coal companies discount the debt from the generators. The shortfall between the amount of customer debt collected and the discounted amount due to the coal companies would then be collected from customers in the form of a surcharge over a period of time. Commercialization will only be effective if debt is at a level each company can deal with and remain financially viable.

It is recommended that the Government of Mongolia review the debt resolution recommendation again and implement it or arrive at an alternative solution and move forward. Without government intervention, the individual licensees cannot solve the problem.

Preconditions

Several Senior Decision Makers (MPs, or Ministers) must take an interest in this issue and lead the effort to resolve it. Without this level of support, the issue will not get resolved.

Summary Action Plan

Task

Responsibility

Time Frame

1. Form an Action Team of Senior Decision Makers and empower them to resolve the

Sector Recommendation B

The Government of Mongolia should Implement the September 2001, recommendation given to it to resolve the major debt issues of the Licensees relating to inherited customer accounts receivable, debt to coal suppliers, and the debt from the distribution licensees to the generators.

issue.

Prime Minister or President or Ikh Hural

15 December 2002

2. Action Team reviews the September 2001 recommendation and formulates a strategy

Action Team

15 January 2003

3. Action Team convenes a working meeting of all stakeholders (Coal Mines, Generators, EDOs, ERA) and establishes ground rules for resolving the issues

Action Team

01 February 2003

4. Weekly meetings are held to negotiate and resolve the debts

Action Team and Stakeholders

01 February – 01 March

5. Settlement agreement reached and implementation initiated

Coal mines, Generators, EDOs, ERA

15 March

Results Expected

1. Allow the licensees to move forward on a more commercial basis
2. Provide an environment more conducive to privatization

Sector Recommendation C

The ERA should incorporate regulatory incentive mechanisms in the tariff system

Background of the Issue

Rate of Return (or Cost Plus) Regulation does not necessarily provide a licensee with incentives to reduce costs, improve service levels, or to implement new, innovative programs. Performance Based (or Incentive) Regulation aims to overcome this deficiency. If a pre determined performance measure has been met or exceeded, the Licensee is rewarded in the form of higher "Profits". If targets are not met, the Licensee is penalized, generally in financial terms (lower "Profits"). It is very important to remember that the Regulator should not be running the Licensees' businesses. The Regulator can provide the proper incentives, however, to allow innovative managers to benefit from cost effective and customer oriented improvements.

In the case of generators in Mongolia, possible incentive targets could include items such as:

- Improvement in Power Station Availability
- Reduction of the Fuel Rates
- Reduction of Station Use

It has been recommended that UB4 develop proposals for one or more incentive mechanisms and make a proposal to ERA for implementation (see Company Recommendation L). The mechanisms should be developed by determining a reasonable base level for a particular measure (say fuel rates) using historical data and recent demonstrated levels. If the actual performance over a period of time (say one year) were better by at least a given amount, then the tariff would be increased to provide UB4 with additional income. If the power station does not achieve the base level, then it would be penalized. Similar incentive mechanisms should be developed for Distribution Licensees.

Also see Company Recommendation L.

Preconditions

ERA agrees that Performance Based Regulation is more effective than the current system.

Summary Action Plan

Task

Responsibility

Time Frame

Sector Recommendation C

The ERA should incorporate regulatory incentive mechanisms in the tariff system

1. ERA notifies Licensees to propose incentive mechanisms to be utilized in 2004

ERA

01 May 2003

2. Licensees submit proposals to ERA

Licensees

15 August 2003

3. ERA conducts open hearings on the Licensee's proposals

ERA

15 September 2003

4. ERA issues an order specifying the incentive mechanism and the targets for each Licensee for the year 2004

ERA

01 November 2003

5. Licensees report on their individual progress in meeting the targets

Licensees

Quarterly

Results Expected

1. More effective form of regulation
2. Encourage innovation on the part of Licensees
3. Lower cost of electricity
4. Licensees have the opportunity to be rewarded for their good results

Sector Recommendation D

The ERA should incorporate an Ancillary Services component in the Generation tariff to allow Licensees to recover the cost of cycling boilers on short notice to follow the load.

Background of the Issue

The current tariff does not recognize the fact that UB4 is used for load following throughout the day. In order to follow the load, UB4 must cycle its boilers up and down which requires the power station to utilize more mazut than in steady state operation. It is recommended that the company perform a detailed analysis of the incremental cost to cycle its boilers on short notice to follow the load and present that analysis to the ERA in order that an Ancillary Services tariff component can be developed and applied in the future.

See Company Recommendation M

Preconditions

The ERA must agree to allow UB4 to recover costs incurred as a result of following the instructions of the Dispatch Licensee.

Summary Action Plan

Task

Responsibility

Time Frame

1. UB4 performs tests on those boilers (and boiler turbine combinations) used for load following to determine the incremental cost of load following.

Chief Engineer

15 December 2002 –

15 March 2003

2. UB4 submits the details of the tests along with a tariff proposal to compensate it for load following.

Chief Engineer and Finance & Accounting

15 April 2003

Sector Recommendation D The ERA should incorporate an Ancillary Services component in the Generation tariff to allow Licensees to recover the cost of cycling boilers on short notice to follow the load.
3. ERA reviews the proposal and conducts open hearings on the issue ERA 15 May 2003 4. Tariff Order issued to incorporate the Ancillary Service tariff for UB4 ERA 01 July 2003
Results Expected 1. Cost Recovery for UB4 for the additional cost incurred to follow the orders of the Dispatch Licensee.

Sector Recommendation E

The ERA should include an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers.

Background of the Issue

The EDNs are not collecting sufficient revenue; therefore, they do not have enough cash to pay the generators. Since UB4 does not have control over the EDNs that subsequently utilize its output, it has little control over its cash collections. The amount of cash received by UB4 is, therefore, externally determined and primarily out of its control. Complicating this situation is the fact that that the ERA will not include an allowance for bad debts in the retail or wholesale tariffs. It is recommended that UB4 and the other licensees lobby ERA and the Government of Mongolia to include an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers.

In accordance with International Accounting Standards, bad debt expense should be recorded to recognize that 100% of the revenue recorded in a particular period will not be collected and also to prevent the Accounts Receivable balance from being overstated.

Preconditions

ERA must be willing to increase retail (and wholesale) tariffs in order to allow Licensees to recover the bad debt expense from customers.

Summary Action Plan

Task

Responsibility

Time Frame

1. Require each Licensee to provide the following information by 31 March 2003:
   a) Revenue recorded (billings) and collections by year for the prior 5 years
   b) An aging of its Accounts Receivable at 31 December 2003.
   c) Documentation of its collection policy and efforts made to collect outstanding Accounts Receivable.
   d) A proposal of the level of Bad Debt expense (as a percent of revenue) to be included in its tariff.

ERA

Sector Recommendation E

The ERA should include an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers.

Request Issued 01 January 2003

Deadline for completion is 31 March 2003

2. Analyze the information provided by Licensees and provide a report summarizing the findings

ERA Staff

01 May 2003

3. Hold open hearings on the Issues

ERA

01 June 2003

4. Issue an order specifying the bad debt expense as a percent of revenue that will be included in tariffs for each licensee at the time the tariffs are adjusted

ERA

30 June 2003

5. Follow through and include the bad debt expense in tariffs.

ERA

During 2003, at the point in time that tariffs are adjusted

Results Expected

1. More reasonable cost recovery for Licensees
2. Makes the bad debt situation more transparent.

Sector Recommendation F

The Government of Mongolia should discontinue the practice of having a list of entities that it will not allow suppliers to disconnect. The Government should not use the energy sector to provide non-transparent subsidies to those entities.

Background of the Issue

The Government of Mongolia has a list of entities that it will not allow suppliers to disconnect. If the Government wants to foster a commercial business environment, it is recommended that this practice be discontinued. If the Government decides that it is in the public interest to subsidize certain entities, then it should do so with public (budget) funds. The Government should not use the energy sector to provide non-transparent subsidies to those entities.

NOTE: This recommendation is related to Sector Recommendation G

Preconditions

The Government of Mongolia must be willing to allow the Energy Sector entities to operate on a commercial basis, according to the Energy law.

Summary Action Plan (SAME AS SECTOR RECOMMENDATION G)

Task

Responsibility

Time Frame

1. Place the issue on the agenda for the next meeting of the Cabinet of Ministers

Minister of Infrastructure

Prior to 31 December 2002

2. Propose to the Cabinet of Ministers that any restrictions on disconnecting electricity and heat consumers be removed and the issue of electricity supply be decided on by ERA, as provided in the Electricity Law. Any subsidies the Government wants to give to customers should be made transparent and provided for in the Budget.

Minister of Infrastructure

Prior to 31 December 2002

3. A Decree is issued stating that no Ministries are to interfere in the disconnection

Sector Recommendation F The Government of Mongolia should discontinue the practice of having a list of entities that it will not allow suppliers to disconnect. The Government should not use the energy sector to provide non-transparent subsidies to those entities.
process. Cabinet of Ministers By 15 February 2003
Results Expected 1. Improved payment discipline 2. Improved collection of Revenue 3. More commercially oriented Energy Sector

Sector Recommendation G

The Government of Mongolia should allow licensees to take more vigorous collection action with retail customers, including State Owned and Budget Entities

Background of the Issue

In addition to having a list of entities that it will not allow suppliers to disconnect, the Government of Mongolia and some of its Ministries often do not allow electricity and heat suppliers to disconnect State Owned Entities (Industrial and commercial consumers) and Budget Customers. In effect, the Electricity Suppliers are not allowed to exercise the rights they are granted in the Electricity Law. If the Government wants to foster a commercial business environment, it is recommended that this practice be discontinued. If the Government decides that it is in the public interest to subsidize certain entities, then it should do so with public (budget) funds. The Government should not use the energy sector to provide non-transparent subsidies to those entities.

NOTE: This recommendation is related to Sector Recommendation F

Preconditions

The Government of Mongolia must be willing to allow the Energy Sector entities to operate on a commercial basis, according to the Energy law.

SUMMARY ACTION PLAN (SAME AS SECTOR RECOMMENDATION F)

Task

Responsibility

Time Frame

1. Place the issue on the agenda for the next meeting of the Cabinet of Ministers

Minister of Infrastructure

Prior to 31 December 2002

2. Propose to the Cabinet of Ministers that any restrictions on disconnecting electricity and heat consumers be removed and the issue of electricity supply be decided on by ERA, as provided in the Electricity Law. Any subsidies the Government wants to give to customers should be made transparent and provided for in the Budget.

Minister of Infrastructure

Prior to 31 December 2002

Sector Recommendation G

The Government of Mongolia should allow licensees to take more vigorous collection action with retail customers, including State Owned and Budget Entities

3. A Decree is issued stating that no Ministries are to interfere in the disconnection process.

Cabinet of Ministers

By 15 February 2003

Results Expected

1. Improved payment discipline
2. Improved collection of Revenue
3. More commercially oriented Energy Sector

Sector Recommendation H

If the opportunity arises for the Government of Mongolia to modify the Law on Corporations, it is recommended that the Executive Director of the Company should be a member of the Governing Board.

Background of the Issue

The Governing Board (Board of Directors) presently consists only of representatives of the 3 Ministries that are the shareholders of the company. It, therefore, consists of representatives from the State Property Committee, Ministry of Finance and Economy, and Ministry of Infrastructure. None of the representatives have any day-to-day knowledge of the company operations. In the majority of Western companies, the Chief Executive Officer of the company is also a member (often the Chairman) of the Board of Directors. In the case of Mongolia, it is recommended that the Executive Director be a member of the Governing Board. This will allow more detailed input on company operations, thereby improving the quality of decisions of the Governing Board.

Preconditions

The 3 shareholding Ministries must agree on such a change.

Summary Action Plan

Task

Responsibility

Sector Recommendation H

If the opportunity arises for the Government of Mongolia to modify the Law on Corporations, it is recommended that the Executive Director of the Company should be a member of the Governing Board.

Time Frame

1. Discuss the issue among the current members of the Governing Board.

Governing Board

Prior to 31 March 2003

2. Recommend amendments to the Law on Corporations, if required, to allow the structure change of members on the Board of Directors. (According to Article 75.4 of the Company Law of Mongolia non-shareholders can be members of the Governing Board).

State Property Committee

30 June 2003

3. Submit amendments to the Ikh Hural

State Property Committee

30 June 2003

Results Expected

1. More operational input to decisions of the Governing Board.
2. Improved decision making

Sector Recommendation I

The Ministry of Infrastructure should allow the company, and other generators, to have more influence over the fuel procurement process. The Ministry should discontinue the practice of dictating that power stations buy amounts of coal in excess of the quantity needed to maintain a reasonable inventory. Additionally, power stations should not be required to buy from mines that do not produce the type or quality of coal they need.

Background of the Issue

Fuel represents 52% of overall costs of UB4, therefore, the procurement process is extremely important. Given that fuel prices and terms are determined by the Ministry of Infrastructure, this task is a difficult one for UB4 personnel. It is recommended that the Ministry allow the company, and other generators, to have more influence over the process. Although the Ministry is delegated the power to establish fuel prices by the Energy Law, it should allow the generators to work with the coal mines to develop quality guidelines for fuel that relate to the price paid.

It is also important for the Ministry to discontinue the practice of dictating that power stations buy amounts of coal in excess of the quantity needed to maintain a reasonable inventory. Additionally, power stations should not be required to buy from mines that do not produce the type or quality of coal they need. The industry cannot be expected to operate in a commercial manner if a government ministry does not allow it to effectively procure its primary input.

Coal procurement should be determined by the generator, given prudent inventory management and cost considerations. If, in fact, a coal mine can save money by shipping coal to a power station in advance of its needs, then the price and or payment terms should reflect that.

Preconditions

The Ministry of Infrastructure must be willing to abide by the Energy Law and allow the power stations to operate in a commercial manner.

Summary Action Plan

Task

Responsibility

Time Frame

1. A decree is issued stating that no person in the Ministry of Infrastructure is to interfere in the fuel procurement process, other than as specifically allowed for in the Energy Law.

Minister of Infrastructure

31 December 2002

Sector Recommendation I
The Ministry of Infrastructure should allow the company, and other generators, to have more influence over the fuel procurement process. The Ministry should discontinue the practice of dictating that power stations buy amounts of coal in excess of the quantity needed to maintain a reasonable inventory. Additionally, power stations should not be required to buy from mines that do not produce the type or quality of coal they need.
Results Expected 1. More cost effective fuel procurement decisions 2. Reduced cost of fuel 3. Lower electricity and heat tariffs

Sector Recommendation J

The Ministry of Infrastructure should revise the decree requiring licensees to procure materials through the EA. The licensees should be given the option of procuring the items themselves.

Background of the Issue

UB4 has a staff responsible for procurement of spare parts and consumable materials. However, there is duplication due to a decree from the Minister of Infrastructure that the energy sector entities procure certain spare parts and consumables through the Energy Authority (EA). In the case of mazut, an imported commodity with a price fluctuating based on the world market price of oil; such a directive may be necessary. Also, to the extent that significant volume discounts are available, centralized procurement of certain spare parts and consumables may be justified. However, that does not occur with many spare parts and consumable materials. Discussion with the Procurement staff of UB4 and other licensees indicates that they feel that they can procure many items at a lower cost by purchasing direct rather than relying on the EA. In addition, they save the service fee charged by the EA.

It is recommended that the Ministry of Infrastructure revise the decree requiring licensees to procure materials through the EA. The licensees should be given the option of procuring the items themselves. Of course, if the licensee feels that it receives a lower price by having EA do the procurement, then it may do so.

Preconditions

The Ministry of Infrastructure must be willing to allow the power stations to operate in a commercial manner.

Summary Action Plan

Task

Responsibility

Time Frame

1. The Minister of Infrastructure revises the prior Decree, making the procurement of spare parts and consumables through the Energy Authority an OPTION of the energy sector licensees, rather than a requirement.

Minister of Infrastructure

31 December 2002

Sector Recommendation J

The Ministry of Infrastructure should revise the decree requiring licensees to procure materials through the EA. The licensees should be given the option of procuring the items themselves.

Results Expected

1. More cost effective procurement decisions
2. Reduced operation and maintenance cost of the power station.
3. Lower electricity and heat tariffs

11. MOVING FORWARD

11.1 PRIORITIZING THE RECOMMENDATIONS

The author of this report feels that all recommendations detailed in Chapter 10 are important for the UB4 Management Team and the Government of Mongolia to pursue over time. The resources of the Company, however, are limited in terms of money and management time. Government resources are also limited. In addition, unless Key Government Decision Makers embrace the Sector Recommendations, they will never be adopted.

For that reason, the Author has utilized his judgment to assign priorities to each of the recommendations in terms of the overall importance of the recommendation and the urgency of the recommendation.

> It should be noted that the Author has not had an opportunity to discuss the priorities with Company management, the Governing Board, or representatives of the Government of Mongolia. This document will provide the foundation for discussions with those stakeholders, and any interested Donors, during the next mission to Ulaanbaatar in late November and early December 2002.

11.2 COMPANY RECOMMENDATIONS

Exhibit 11.1 displays the priorities related to company recommendations. To provide insight to the assignment of priorities, for example, the author feels that the effective use of the funds for the Phase 2 Rehabilitation Project is so important to the long-range success of UB4 that a high priority was assigned to recommendations concerning that project. On the other hand, the recommendation to seize opportunities to reduce the number of employees has less urgency since the opportunities will primary arise after the Rehabilitation project is completed and new operational practices are initiated.

Exhibit 11.1 Prioritization of Company Recommendations

	RECOMMENDATION	Importance	Urgency
A	Continue to improve accounting and reporting and move toward IAS compliance over the next few years	Medium	Medium
B	Engineers and finance specialists should perform a financial analysis on future projects prior to presenting them to management for approval.	High	High
C	Create the position of MIS Manager and give that person overall responsibility for planning and management of the organizations IT and MIS systems	High	High

	RECOMMENDATION	Importance	Urgency
D	Develop a plan and budget to upgrade computer systems, extend the Local Area Network in the office and the plant and manage hardware and software maintenance.	Medium	Medium
E	Follow the short-term plan developed to enhance and extend some sections of the IT and network infrastructure including equipment that can be financed from the current UB4 budget. Also develop a four-year plan.	Medium	Medium
F	Continually monitor and report on the Key Performance Indicators.	High	High
G	Provide training to management on the facilities available in the local area network and encourage them to make use of this tool to speed communication within the organization	Medium	Low
H	IT activities such as security, virus control, and back-up need to be reviewed and strengthened.	Medium	Medium
I	Issue the Executive Order to produce the recommended MIS Reports	Done	Done
J	The Management team must take advantage of the Phase 2 loan proceeds in the most optimal manner from an operational and financial perspective to realize improvements on the Key Performance Measures	High	High
K	Once the rehabilitation work is completed, sufficient resources must be devoted to periodic maintenance to prevent a recurrence of the situation in the mid 1990s.	High	Low
L	Become more proactive in the regulatory process. For example, develop and propose Incentive Mechanisms to ERA	Medium	Medium
M	Perform a detailed analysis of the incremental cost to cycle its boilers on short notice to follow the load and present that analysis to the ERA in order that an Ancillary Services tariff component can be developed and applied	Medium	Medium
N	Devote sufficient time and resources to the tariff process in order to present its position in a detailed, transparent, understandable manner to have a successful outcome.	Medium	Medium
O	Continue to enhance the compensation system to ensure that employees are compensated based on their contribution to the success of the organization. The Incentive Compensation or Bonus Plan is a progressive measure. Phase out the Experience Benefit and the 13th Month payments.	Medium	Low
P	Consider external economic factors, the financial situation of the Company, and wage levels in other industries when determining salary increases.	Medium	Low

	RECOMMENDATION	Importance	Urgency
Q	Take every opportunity to reduce employee levels (a factor over which management has a significant level of control) based on operating and financial criteria. Attrition should be used as a primary tool.	Medium	Low

11.3 TECHNICAL ASSISTANCE TO FACILITATE PROGRESS

The 4 recommendations that indicate both high importance and urgency (B, C, F, and J) should obviously be the ones to focus on immediately.

Recommendations B and J

These Recommendations deal with financial analysis and its use in effectively utilizing the Phase 2 loan proceeds. The amount of funds devoted to this project is so great and have the potential of improving the technical and operating characteristics of the power station, therefore requiring immediate action. Also, since the Company is responsible for repaying the loan, it must utilize the funds effectively in order to be a commercial enterprise.

Technical assistance in the near term can focus on:

1. Assistance to UB4 Management to establish the "Financial Analysis Team"
2. Build capacity with the team in financial analysis techniques by reviewing the previously developed financial analysis seminar materials with them
3. Assistance in drafting the decree of the Executive Director
4. Assistance, on an as needed basis to review actual work packages and provide capacity building and direction on methods of analysis

Recommendation C

The creation of the MIS manager position is critical to the accomplishment of all the other MIS recommendations. The MIS function, however, is not an end in itself. Good Management Information Systems do provide critical information to the entire Company (not just managers) to inform them "where they are" and "where they are going" on technical, operational, and financial dimensions. Once a person is devoted full time to this position, that person can facilitate the other recommendations over time.

Technical assistance in the near term can focus on:

1. On an as needed basis, being available to provide advice to the Executive Director and the Human Resources Department on the selection process
2. Capacity building with the newly appointed MIS Manager to define his role and select his team.

Recommendation F

It is important to keep the entire management team focused on operational performance and cost control, therefore, progress on Recommendation F should be started immediately. A significant amount of technical, operational, and financial information is accumulated and reported currently. Utilizing the present manual and computerized systems, standardized reports can be prepared effective January 2003. Of course, once the financial systems are upgraded in the second quarter of 2003 (once the MIS Manager is in place), further enhancements can be made.

Technical assistance in the near term can focus on:

1. Capacity building with the finance staff on the development of monthly reports to be implemented effective with January 2003 reporting.
2. Advising the newly appointed MIS Manager on upgrading the financial systems.

Although not rated as highly as the 4 items above, there are other Company recommendations on which progress can begin in the near term. Specifically, they are Recommendation A concerning the movement toward compliance with International Accounting Standards (IAS), and Recommendations M and N concerning the regulatory aspects of the business environment.

Recommendation A

As discussed in Chapter 3, it is important to move closer to IAS compliance. Full IAS compliance, which includes a formal audit, is very costly and not recommended in the near term. The financial statements of UB4 would be significantly enhanced, however, with some limited, straightforward disclosures. As shown in the Summary Action Plan for Recommendation A, footnote disclosures should be developed for publication with the Year 2002 financial statements (Task 1). Also, effective with Year 2003 reporting, accounting for maintenance costs (task 3) and the Phase 2 refurbishment costs and associated loan liability) (Task 4) should be improved.

Technical assistance in the near term can focus on:

1. Capacity building with the finance staff on IAS disclosure.
2. Providing assistance to the finance staff to draft the footnote disclosures for the Year 2002 financial statements.
3. Educating the Finance Staff on accounting for maintenance costs, Construction Work in Progress, and loan liabilities.

Recommendations M and N

As discussed in Chapter 7, in the new environment the tariff process is a very important one. Also, there is limited experience with this process so it is an area to focus on.

Technical assistance in the near term can focus on:

1. Advising the newly appointed Tariff Specialist (Recommendation N) to build capacity and to define his role and work with him and the staff of the ERA to determine the information needs and supporting detail to have more efficient and effective tariff proceedings.
2. Providing advice to the Chief Engineer and his staff concerning the detailed analysis of the cost to cycle boilers on short notice. Assistance in clearly documenting the results of the tests for submission to ERA would also add value to the process.

11.4 SECTOR RECOMMENDATIONS

Exhibit 11.2 displays the priorities related to sector recommendations. To provide insight to the assignment of priorities, for example, the author feels that the resolution of the debt issues involving Customers, Licensees (Generators and Distributors), and coal Suppliers is very critical to the sector being able to operate on a commercial basis. On the other hand, the recommendation to modify the Law on Corporations to allow the Executive Director to be a member of the Governing Board has less urgency, although it would allow for more efficient communications with the Board and improved decision-making.

Exhibit 11.2 Prioritization of Sector Recommendations

	RECOMMENDATION	Importance	Urgency
A	The Government of Mongolia should assume the exchange rate risk associated with international loans.	Medium	Medium
B	The Government of Mongolia should Implement the September 2001, recommendation given to it to resolve the major debt issues of the Licensees relating to inherited customer accounts receivable, debt to coal suppliers, and the debt from the distribution licensees to the generators.	High	High
C	The ERA should incorporate regulatory incentive mechanisms in the tariff system	Medium	Medium
D	The ERA should incorporate an Ancillary Services component in the Generation tariff to allow Licensees to recover the cost of cycling boilers on short notice to follow the load.	Medium	Medium
E	The ERA should include an allowance for bad debt in the wholesale and retail tariffs to recognize that virtually no suppliers collect 100% of the amounts billed to customers.	Medium	Medium
F	The Government of Mongolia should discontinue the practice of having a list of entities that it will not allow suppliers to disconnect. The Government should not use the energy sector to provide non-transparent subsidies to those entities.	High	High
G	The Government of Mongolia should allow licensees to take more vigorous collection action with retail customers, including State Owned and Budget Entities	High	High
H	If the opportunity arises for the Government of Mongolia to modify the Law on Corporations, it is recommended that the Executive Director of the Company should be a member of the Governing Board.	Medium	Low
I	The Ministry of Infrastructure should allow the company, and other generators, to have more influence over the fuel procurement process. The Ministry should discontinue the practice of dictating that power stations buy amounts of coal in excess of the quantity needed to maintain a reasonable inventory. Additionally, power stations should not be required to buy from mines that do not produce the type or quality of coal they need.	High	High
J	The Ministry of Infrastructure should revise the decree requiring licensees to procure materials through the EA. The licensees should be given the option of procuring the items themselves.	Medium	Medium

11.5 SUPPORT TO THE GOM IN IMPLEMENTATION

The 4 recommendations that indicate both high importance and urgency (B, F, G and I) should obviously be the ones to focus on immediately.

Recommendation B

The resolution of the debt issues involving Customers, Licensees (Generators and Distributors), and coal Suppliers is very critical to the sector being able to operate on a commercial basis. In September 2001 a recommendation was made to the Government of Mongolia to resolve the old debt issues. Subsequent discussions were held with various Ministry personnel and two Members of Parliament during the fourth quarter of 2001 and the first quarter of 2002. The issue was again raised at the Donors Conference in March 2002. Since no action has been taken to date, it is obvious that no high level Government official or group has taken a strong personal interest in resolving this issue. The author is of the opinion that if a high-ranking official decides to "Champion" this cause, then there is a chance to resolve the issue. Of course, we must realize that this is a very difficult and complex issue, although not an insurmountable one.

Technical assistance in the near term can focus on:

1. Briefing Senior Government officials on the specifics of the issue and attempting to gain their support in championing the cause.

2. Performing the role of Facilitator to coordinate the activities of the Action Team and help them move through the decision making process in an orderly fashion. Remember, the decisions must come from the Government officials and the stakeholders in the process – not from an outside consultant.

Recommendations F and G

The Law on Energy is quite clear on the issue of suppliers being able to take collection action with all classes of customers, up to and including disconnection for non-payment. Two factors, however, are preventing suppliers from exercising their rights under the law. The first is the list of customers that are not allowed to be disconnected and the second is the reluctance of the suppliers to disconnect other customers for fear of political reprisal from the Government. The main objective here is to have the GOM allow suppliers to exercise their rights under the law. If the GOM feels that certain customers, or groups of customers, should be subsidized then the subsidy should come from public funds, not the Energy Sector.

Technical assistance in the near term can focus on:

1. Providing support as required by the Ministry of Infrastructure or other Ministries to communicate the importance of the issue. This could include education on subsidy mechanisms and the proper delivery of subsidies determined to be necessary.

2. Assistance in drafting a decree stating that no ministries are to interfere with the disconnection process allowed by law

Recommendation I

In order to operate in a more commercial environment, power stations must be able to have some level of control over the procurement of fuel, the most expensive input to the process. Although the Ministry of Infrastructure is granted the authority over fuel pricing according to the Law on Energy, the power stations should be able to control the other factors involved in procurement.

Technical assistance in the near term can focus on:

1. Providing support as required by the Ministry of Infrastructure to draft the Decree.

Although not as critical or costly an issue as coal procurement, Recommendation J dealing with revising the Decree requiring Licensees to procure other materials through the Energy Authority should also be implemented.